MAR/FY06

ABERDEEN PROVING GROUND

Maryland

Army Defense Environmental Restoration Program Installation Action Plan

Final 30 July 2006

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Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multi-year Cleanup Program for an installation. The plan identifies environmental cleanup requirements at each site or area of concern, and proposes a comprehensive, installation-wide approach, with associated costs and schedules, to conduct investigations, necessary remedial actions.

In an effort to coordinate planning information between the restoration manager, US Army Environmental Center (USAEC), Aberdeen Proving Ground, Installation Management Agency (IMA), executing agencies, and the public, an IAP was completed. The IAP is used to track requirements, schedules and tentative budgets for all Army installation cleanup programs.

All site-specific funding and schedule information has been prepared according to projected overall Army funding levels and is, therefore, subject to change.

The following agencies contributed to the formulation and completion of this Installation Action Plan during a planning workshop held on 13-16 March 2006:

Company/Installation/Branch

US Army Environmental Center (USAEC)
Engineering & Environment, Inc. for USAEC
USAEC, Information & Environmental Reporting Division (IERD)
General Physics Corporation
Aberdeen Proving Ground - Directorate of Safety, Health and Environment (DSHE)
IMA, Northeast Region
US Army Center for Health Promotion and Preventative Medicine (USACHPPM)

Acronyms & Abbreviations

~	Approximately
AA	Aberdeen Area
AEDB-R	Army Environmental Database – Restoration
AEHA	(United States) Army Environmental Hygiene Agency (replaced by CHPPM)
AMC	Army Materiel Command
AOC	Area of Concern
AOU	Accelerated Operable Unit
APG	Aberdeen Proving Ground
APGSCC	Aberdeen Proving Ground Superfund Citizens Coalition
ARAR	Applicable or Relevant and Appropriate Requirements
ASG	Aerial Spray Grid
ARC	Used in the Installation Description
ARL	(US Army) Research Laboratory
ATC	(US Army) Aberdeen Test Center
ATSDR	Agency for Toxic Substances and Disease Registry
AWQC	Ambient Water Quality Criteria
BG&E	Baltimore Gas and Electric
BR	Bush River
BRAC	Base Realignment and Closure
BRDA	Burn Residue Disposal Area
BRRMDF	Bush River Radioactive Material Disposal Facility
Bldg	building
BRL	(United States Army) Ballistics Research Laboratory
BTAG	Biological Technical Assistance Group
BX	botulism toxin
BZ	3-quinuclidinyl Benzilate, an incapacitating agent
CC	Canal Creek
CC2	S-bis (2, 4, 6-trichlorphenylchlor) urea
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CHPPM	(United States Army) Center for Health Promotion and Preventive Medicine
CI	Carroll Island
CISA	Carroll Island Study Area
CN	chloracetophenone
CNB	chloracetophenone; 10% mixture w/benzene & carbon tetrachloride
CNS	chloracetophenone; 25% mixture w/chloroform & chloropicrin
COMAR	Code of Maryland Regulations
CRL	Certified Reporting Limit
CS	ortho-chlorobenzalmalononitrile
CSTA	(United States Army) Combat Systems Test Activity (replaced by ATC)
CWM	Chemical Warfare Materiel
cy	cubic yard
DCE	dichloroethene
DD	Decision Document
DDD	dichloro-diphenyl-dichloroethane
DDDr	DDD plus breakdown products

Acronyms & Abbreviations

DDE	dichloro-diphenyl-dichloroethene
DDT	dichoro-diphenyl-trichloroethane
DDTr	DDT plus breakdown products
DERA	Defense Environmental Restoration Account
DERC	Data Evaluation and Risk Characterization
DIMP	diisopropyl methylphosphonate
DM	Adamsite
DMMP	dimethyl methyl phosphonate
DNAPL	Dense Non-Aqueous Phase Liquid
DPT	Direct Push Technology
DPW	Directorate of Public Works (now called Directorate of Installation Operations)
DRMO	Defense Reutilization and Marketing Office
DSERTS	Defense Site Environmental Restoration Tracking System (now called AEDB-R)
DSHE	Directorate of Safety, Health and Environment
EA	Edgewood Area
ECBC	(US Army) Edgewood Chemical Biological Center
ECD	Environmental Compliance Division
ECRD	Environmental Conservation and Restoration Division
EM	Electromagnetic
EMP	Electro Magnetic Pulse
EPA	(United States) Environmental Protection Agency
ER,A	Environmental Restoration, Army (formally called DERA)
ESD	Explanation of Significant Difference
FEMA	Federal Emergency Management Agency
FFA	Federal Facilities Agreement
FFSRA	Federal Facility Site Remediation Agreement
FFS	Focused Feasibility Study
FS	Feasibility Study
ft	foot
FY	Fiscal Year
GA	dimethylaminocyanophosphoric acid
GAC	Granular Activated Carbon
GATE	German Ammunition Train Explosion
GB	isopropylmethylphosphonofluoridate
GD	Soman
GQ	Graces Quarters
GQSA	Graces Quarters Study Area
GW	Groundwater
GWTF	Groundwater Treatment Facility
HC	hexachloroethane, a smoke mixture
HD	mustard agent
HE	High explosive
HEL	Human Engineering Laboratory
HH	Human Health
HHRA	Human Health Risk Assessment

HMF	Hazardous Material Facility
HP	a WP and mustard mixture
HRS	Hazard Ranking System
IDM	Investigation-derived material
IMPA	isopropyl methyl phosphonic acid
IAP	Installation Action Plan
IRA	Interim Remedial Action
IRP	Installation Restoration Program
ITR	Independent Technical Review
K	thousand
KD	Known Distance
LC	Lauderick Creek
LTM	Long Term Monitoring
LTO	Long Term Operation
M	million
MCL	Maximum Contaminant Level
MDE	Maryland Department of the Environment
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MLF	Michaelsville Landfill
MMRP	Military Munitions Response Program
MNA	Monitored Natural Attenuation
MOU	Memorandum of Understanding
MPA	methyl phosphonic acid
MRICD	(US Army) Medical Research Institute of Chemical Defense
MTBE	methyl tert butyl ether (gasoline additive)
NCP	National Contingency Plan
NE	Not Evaluated
NFA	No Further Action
NM	designation for a powdered elemental sulfur mixture
NPL	National Priorities List
NRC	Nuclear Regulatory Agency
NS	Nike Site
O&M	Operation & Maintenance
OA	Other Aberdeen
OB/OD	Open Burning/Open Detonation
OBRRD	Old Bush River Road Dump
OC&S	(US Army) Ordnance Center and School
OEA	Other Edgewood Areas
OF	O-Field
OU	Operable Unit
PA	Preliminary Assessment
PAAF	Phillips Army Airfield
PAH	polynuclear aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	tetrachloroethene

pCi/g	pico Curies per gram
PETN	pentaerythrite tetranitrate
POL	Petroleum, Oil & Lubricants
PP	Proposed Plan
ppb	parts per billion
ppm	parts per million
QA/QC	Quality Assurance/Quality Control
R&D	Research and Development
RA	Remedial Action
RA(C)	Remedial Action – Construction
RA(O)	Remedial Action – Operation
RAB	Restoration Advisory Board
RAD	Radiological
RBC	Risk-Based Concentration
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RDX	Royal Demolition Explosive
REM	Removal
RI	Remedial Investigation
RIP	Remedy in Place
ROD	Record of Decision
RR	Railroad
RRSE	Relative Risk Site Evaluation
SARA	Superfund Amendments and Reauthorization Act
SBCCOM	(US Army) Soldier & Biological Chemical Command
SCC	Superfund Citizens Coalition
SI	Site Inspection
STB	Super Tropical Bleach
SVOC	Semi-Volatile Organic Compound
SWMU	Solid Waste Management Unit
TAG	Technical Assistance Grant
TAL	Target Analyte List
TCE	trichloroethylene
TCL	Target Compound List
TCPU	trichlorophenylurea (clothing impregnation degradation product)
TECA	1,1,2,2-tetrachloroethane
TGY	Toxic Gas Yard
TI	Technical Impracticability
TNT	trinitrotoluene
TPH	total petroleum hydrocarbons
TRC	Technical Review Committee
TRV	Toxicity Reference Value
TVOC	Total Volatile Organic Compounds
ug/L	micrograms per liter
US	United States
USGS	US Geological Survey

USACE	US Army Corps of Engineers
USACHPPM	(US Army) Center for Health Promotion and Preventative Medicine
USAEC	US Army Environmental Center
USATHAMA	(US Army) Toxic and Hazardous Material Agency (replaced by USAEC)
UST	Underground Storage Tank
USTEU	(US Army) Technical Escort Unit
UXO	Unexploded Ordnance
VOC	Volatile Organic Compound
VX	o-ethyl-S-(2-diisopropylaminoethyl) methylphosphonothioate (nerve agent)
WB	Western Boundary
WBSA	Western Boundary Study Area
WP	White Phosphorus
WRMDF	Westwood Radioactive Material Disposal Facility
WSA	Westwood Study Area
WW	Westwood
WWI	World War One
WWII	World War Two
XRF	X-Ray Fluorescence

Installation Information

Installation Locale: Aberdeen Proving Ground (APG) lies in Harford and Baltimore Counties, Maryland near the head of the Chesapeake Bay. The Installation (Aberdeen Area (AA) and Edgewood Area (EA) comprises approximately 72,500 acres, much of which is underwater or marshy, wooded terrain. The APG-AA portion of the Installation, located in the southeastern part of Harford County, is three miles southeast of the City of Aberdeen. Firing ranges, impact areas, vehicle test tracks, and other test facilities extend southwest to Bush River and include Spesutie Island and Pooles Island. Of the 72,500 land and water acres, 17,000 acres of land are within the AA. The APG-EA (formerly Edgewood Arsenal) lies adjacent to the towns of Edgewood and Joppatowne in the southern part of Harford County. Test areas of the EA include: (1) Gunpowder Neck, extending south into the Chesapeake Bay between Bush River and Gunpowder River, (2) Graces Quarters, a peninsula between Gunpowder River and Saltpeter Creek, and (3) Carroll Island, a peninsula between Saltpeter Creek and the Chesapeake Bay. The Graces Quarters and Carroll Island areas lie across the Gunpowder River in the southeastern corner of Baltimore County. The APG-EA comprises 13,000 land acres of the 72,500 land and water acres of the Installation.

Installation Mission: Aberdeen Proving Ground is home to 66 tenants and a host of satellite activities. Among the major tenants are the US Research, Development and Engineering Command (RDECOM), US Army Ordnance Center and Schools, US Army Developmental Test Command, US Army Aberdeen Test Center, US Army Center for Health Promotion and Preventive Medicine, Northeast Region Civilian Personnel Operations Center, US Army Medical Research Institute of Chemical Defense, Program Manager for Chemical Demilitarization and major elements of the Army Research Laboratory. As a center for Army materiel testing, laboratory research, and military training, the post is a key element in the nation's defense. All tanks and wheeled vehicles which have served US forces for the past 50 years have been tested for performance and durability at APG – from the M4 Sherman tank of World War II to the M1 tank and High Mobility Multipurpose Wheeled Vehicle and Family of Stryker Vehicles of today.

Lead Organization:
Installation Management Agency, Northeast Region

Lead Executing Agencies: US Army Corps of Engineers, Baltimore District

Regulatory Participation:
Federal: US Environmental Protection Agency (EPA), Region III
State: State of Maryland Department of the Environment (MDE)

National Priorities List (NPL) STATUS:
- Resource Conservation and Recovery Act (RCRA) Corrective Action Permit issued September 1986 and renewed September 1988, for regulation of APG Solid Waste Management Units (SWMUs)
- National Priorities List (NPL) Installation close to high population densities with potential for off-post contamination

National Priorities List (NPL) STATUS (continued):
- Michaelsville Landfill listed on NPL October 4, 1989 and entire APG-EA listed on NPL February 21, 1990
- Interagency Agreement with EPA, Region III, March 1990

Projected Dates for Construction Completion: 201209

Projected Dates for NPL Removal: 204009

Installation Restoration Advisory Board (RAB)/Technical Review Committee (TRC)/Technical Assistance for Public Participation (TAPP) STATUS: Updated information from the FY06 IAP and Obligation Plan was being shared with the RAB and MDE representatives during 2005 monthly meetings. This distribution is consistent with APG's ongoing interactive and proactive relationship with local stakeholders, including citizens, regulators, and elected officials, to promote involvement in the IRP. Through various aspects of a mature community relations program, APG continues to reinforce the desire and need for stakeholder participation early in the restoration process. APG's program involves community members in initial project meetings, and through the process to formal public comment periods. APG's RAB continues to meet on a monthly basis with sub-committee or topical interim meetings as needed. Tours are held several times a year to allow Board members to see close-up progress and issues at restoration sites. APG also continues to disseminate information to the general public through a variety of methods including direct mails, news releases, Information Line, Web Site, fact sheets, information repositories, public notices, and displays at community events. A Technical Assistance for Public Participation (TAPP) Grant was awarded in 2005 to support the community RAB Members in technical review of APG IRP documents.

Installation Program Summaries:

IRP

Primary Contaminants of Concern: VOCs, metals, pesticides, CWM, radiologicals (RAD), explosives, propellants
Affected Media of Concern: groundwater, surface water, soil, and sediment
Estimated date for Remedy-In-Place (RIP)/Response Complete (RC): 201209/204009
Funding to Date (up to FY05): $528,416,597
Current Year Funding (FY06): $ 19,703,709
Cost-to-Complete (FY07+): $189,451,000

MMRP

Primary Contaminants of Concern: UXO
Affected Media of Concern: Soil
Estimated date for Remedy-in-Place (RIP)/Response Complete (RC): 2017
Funding to Date (up to FY05): $ 0
Current Year Funding (FY06): $33,000
Cost-to-Complete (FY07+): $137,842,000

Cleanup Program Summary

Installation Historic Activity: Aberdeen Proving Ground (APG) is an active installation, with 30 offices and directorates, and approximately 66 tenant activities or liaison offices. APG's parent organization is the US Army Installation Management Agency, Northeast Region. APG is primarily responsible for planning and testing of weapons systems, rocket and missile systems, munitions, vehicles, and various equipments. APG consists of two functional areas: the Aberdeen Area (AA) and the Edgewood Area (EA).

The APG-AA was established as the Ordnance Proving Ground in December 1917 and became a permanent military post, designated APG, in January 1919. Testing of ammunition and materiel began in January 1918. The original area comprised 29,162 upland acres and 34,600 acres of water. Ordnance officer training began in 1919 with the activation of the Ordnance School of Application. Prior to World War II, activities at APG were characterized by intense research and development, and large-scale testing of a wide variety of munitions, weapons, and materiel. In 1940, enlisted specialist training was consolidated with the officers' training. On July 1, 1940, the Ordnance School became operational.

From 1939 to 1942, during the World War II build-up, the Army acquired approximately 6,800 acres adjacent to the reservation and purchased an additional 244 acres near Churchville for automotive testing. Spesutie Island, providing an additional 1,834 acres, was added to the APG-AA in 1945.

During the Korean and Vietnam conflicts, smaller-scale increases in munitions and materiel development and testing activities occurred at APG. During the Korean conflict, the Ordnance Training Command was established and the Ordnance School was placed under this Command. In 1962, the Ordnance Training Command was discontinued with the advent of the Army Materiel Command (AMC).

In October 1917, by Presidential Proclamation, land southwest of the APG-AA was appropriated for use as a military reservation, known as the Gunpowder Reservation. In May 1918, this reservation was officially designated as Edgewood Arsenal. Edgewood Arsenal remained an Ordnance Installation until July 1, 1918, when it was transferred to the newly-created Chemical Warfare Service. During the 1920s, the Chemical Warfare School was established. The Fort Hoyle Military Reservation became part of Edgewood Arsenal in 1940, adding 5,000 acres to the APG-EA. In 1942, the Installation was designated as the Chemical Warfare Center, and in 1945, the name of the Installation was changed to the Army Chemical Center. In 1962, with the organization of AMC, the Army Chemical Center once again became Edgewood Arsenal, and the US Army Chemical-Biological-Radiological Agency was organized. On July 1, 1971, Edgewood Arsenal became a part of APG.

Historically, all of the military chemical warfare research, development, and related activities at APG have occurred in the APG-EA. Since 1917, the APG-EA has been the site of laboratory research, field testing of chemical materiel and munitions, pilot-scale manufacturing, production-scale chemical agent manufacturing (during World War II), and related test and disposal operations. The APG-EA has also been a center for the storage of chemical warfare materiel and a major receiving center for waste handling operations, including low-level radiological waste.

Currently, APG supports approximately 66 tenant activities. Among the major tenants are the US Research, Development and Engineering Command (RDECOM) , US Army Ordnance Center and Schools (OC&S), US Army Developmental Test Command, US Army Environmental Center (USAEC), US Army Aberdeen Test Center (ATC), US Army Center for Health Promotion and Preventive Medicine (CHPPM), Northeast Region Civilian Personnel Operations Center, US Army Medical Research Institute of Chemical Defense (MRICD), Program Manager for Chemical Demilitarization and major elements of the Army Research Laboratory (ARL). ATC, located in the APG-AA, conducts plans and development tests, and production tests of weapons and weapons systems, rockets and missile systems, munitions, components, survey and target acquisition equipment, armor plate, combat, and general- and special-purpose vehicles. ATC also provides advice and guidance on test and evaluation materials to material developers, material producers, etc. ARL, which is headquartered in the APG-AA, primarily performs research in ballistics and conducts human factors engineering and robotics research and development. CHPPM and MRICD are headquartered in the APG-EA. CHPPM is vital in supporting the Army's total preventive medicine program and encompasses essentially all occupational and environmental health disciplines. MRICD conducts research on medical protection against chemical and biological weapons. USAEC, also headquartered in the APG-EA, is a major focal point in the program management and support efforts of the Army-wide environmental program. USAEC's principal focus is directed toward supporting the installation in achieving and maintaining environmental compliance. OC&S headquarters are located in the APG-AA. OC&S has long been the largest training center for military and civilian personnel in the field of material, maintenance, and integrated materiel management of combat fire power and ground mobility materials in the US.

Since 1976, APG has been participating in the Department of Defense's Installation Restoration Program (IRP) in order to identify the locations and contents of past hazardous waste disposal sites having a detrimental environmental impact and control the migration of hazardous constituents from these sites. The Department of Defense's IRP closely parallels the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)/Superfund Amendments and Reauthorization Act (SARA) program. Prior to 1983, the key agency in executing IRP actions at APG was USAEC (THAMA). In 1983, APG assumed total management responsibility of IRP projects. During 1984-85, APG was evaluated as a potential CERCLA (Superfund) National Priorities List (NPL) site. In April 1985, EPA published a Federal Register notice which proposed all of the APG-EA and Michaelsville Landfill at the APG-AA for inclusion on the NPL. For purposes of the Hazard Ranking System (HRS) scoring, APG was separated into the AA and the EA due to the large acreage involved and the many waste disposal considerations. Prior to NPL placement, IRP study and remediation activities of past releases from Solid Waste Management Units (SWMUs) at APG were regulated through a Resource Conservation and Recovery Act (RCRA) Corrective Action Permit issued in September 1986, and renewed in September 1988.

Michaelsville Landfill was listed on the NPL with a HRS score of 31.45 on October 4, 1989 due to groundwater contamination beneath the landfill. The entire APG-EA was listed on the NPL with a HRS score of 53.57 on February 21, 1990. In March 1990, a Federal Facilities Agreement (FFA) signed by the US EPA Region III and the US Army established a

procedural framework and schedule for compliance with CERCLA, National Contingency Plan (NCP), RCRA, and other applicable federal and state laws and regulations. This Agreement requires thorough investigations and appropriate responses to environmental impacts deemed necessary to protect public health, welfare, and the environment.

Although the State of Maryland is not a formal party to the FFA, the State has actively participated in all aspects of the APG IRP effort. APG has ensured that State representatives have adequate opportunity to participate in the planning and selection of response actions including, but not limited to, review of all applicable data as it becomes available, the development of studies and reports, and review of and comment on response action proposals and activities prior to the initiation of any action.

Meetings are regularly conducted with the EPA and the Maryland Department of the Environment (MDE) to discuss targets of opportunity and to negotiate interim remedial actions, removal actions, accelerated operable units (AOUs), and overall cleanup plans. In March 1993, a change in APG's IRP approach concept was proposed to the regulatory agencies to expedite remedial solutions. Program efforts focus on a macro solution approach for attaining remedial solutions rather than performing the CERCLA process for each source area individually. Initial efforts under this approach were geared toward redefining the study area boundaries according to hydrogeological units, investigating and delineating the boundaries of all contaminated groundwater plumes at APG, and implementing measures to prevent the migration of the contaminated groundwater plumes off-post. Site remedial investigation work has been prioritized based on proximity to the installation boundaries and the degree of risk (associated with the groundwater contamination and sources) to human health and the environment. As a result, additional accelerated remedial actions have been quickly identified and work at low risk areas have been deferred. APG continues to evaluate additional AOUs and targets of opportunity for potential early response action at selected sites, some of which are geared toward a macro solution. Further targets of opportunity could still be identified during the Remedial Investigation/Feasibility Study (RI/FS) process for some study areas, and prompt measures to remediate those areas will occur at that time. In addition, APG is considering implementation of proactive measures such as the installation of groundwater monitoring wells along the APG-EA and APG-AA installation boundaries to detect and monitor any potential for off-post migration of contaminants.

Investigations continue, in conjunction with interim remediation projects and removal actions, at APG as necessary to delineate the SWMUs identified within the 1989 and 1990 RCRA Facility Assessments. Given the historical activities conducted at APG, huge land area, and the lack of ample, detailed historical records, additional SWMUs could still be discovered over the next several years, expanding the scope of this IRP.

From October 1990 to October 1994, an APG Technical Review Committee (TRC) met quarterly to keep the local citizenry informed as to the status of the APG environmental remediation actions planned or conducted and to facilitate public review and comment on the proposed actions with respect to releases or threatened releases of hazardous substances. In FY93, the APG Superfund Citizens Coalition (APGSCC), a local community group, received a $100,000 Technical Assistance Grant (TAG) from the EPA to hire technical consultants to assist them in reviewing and interpreting the APG IRP clean-up program documents, understanding and commenting on remediation plans being proposed

to cleanup contaminated sites, and providing recommendations for the community. This grant helped foster local community involvement in the program, with annual $50,000 grants providing continuing funds for technical experts to help citizens review and comment on technical documents. The APGSCC continued to receive TAG funding through FY03, at which time the citizens group chose not to pursue additional funding.

During 1994, APG identified the need to encourage greater opportunities for the affected communities and representatives of Government agencies to meet and exchange information, review progress, and participate in dialogue with the decision makers about the APG cleanup program. As a result, APG's TRC formally transitioned in January 1995, to a Restoration Advisory Board (RAB). The RAB is made up of approximately 20 community members and regulatory/governmental members, and is co-chaired by representatives from the Army and the community. A formal RAB Charter was established in January 1996. The RAB holds monthly meetings open to the public. The RAB promotes community awareness and obtains effective community review and comment on the environmental cleanup and restoration actions of the APG IRP. The RAB serves as the key mechanism to disseminate information regarding the IRP, and ensures that various opinions about environmental restoration from the diverse interests within the community are heard. The APG RAB received a Technical Assistance for Public Participation (TAPP) Grant in 2005. The grant allows the community RAB Members to obtain independent technical support for reviewing and understanding the IRP documents.

An IRP Action Plan is prepared annually and is an integral part of the IRP project management and implementation. APG uses the action plan as a comprehensive planning tool to illustrate the future direction and goals of the IRP, to identify the strategies for attaining these goals, and to justify the utilization of these strategies. USAEC will use this Action Plan to monitor the requirements and schedules for the APG IRP and make decisions concerning tentative budgets for the APG IRP.

IRP: A detailed summary of phases and actions completed to date is presented in the Schedule section of this FY06 IAP. Progress to date for each AEDB-R site is listed for each individual site in the Site Descriptions section of this IAP, as well as projected schedules for upcoming milestones. To date, 156 sites have achieved Response Complete or Remedy in Place (RC/RIP) status. Of that total number, 60 high risk, 57 medium risk, 37 low risk, and 2 non-evaluated risk sites have advanced to RC/RIP status. Of that total number, 13 sites have achieved RC status and have LTM phases ongoing.

MMRP: Progress to date for each AEDB-R site is listed for each individual site in the Site Descriptions section of this IAP, as well as projected schedules for upcoming milestones.

ABERDEEN PROVING GROUND

Installation Restoration Program

Total AEDB-R Sites/AEDB-R Sites with Response Complete: 253/152

Different Site Types:

16	Burn Area	4	Contaminated Buildings
4	Contaminated Soil Piles	6	Contaminated Fill
21	Contaminated Groundwater	7	Contaminated Sediments
31	Surface Disposal Area	13	Chemical Disposal
3	Drainage Ditch	20	Disposal Pit/ Dry Well
1	Leach Field	3	Firing Range
23	Industrial Discharge	4	Incinerator
22	Landfill	4	Maintenance Yard
1	Washrack	26	Storage Area
2	Surface Impoundment/Lagoon	2	Small Arms Range
4	Spill Site Area	3	Sewage Treatment Plant
1	Underground Tank Farm	11	Underground Storage Tank
3	Waste Lines	1	Radioactive Waste Area
4	Waste Treatment Plant	3	Explosive Ordnance Disposal
9	Unexploded Munitions/Ordnance	1	Mixed Waste Area

Most Widespread Contaminants of Concern: Heavy Metals, Explosives, Solvents, Pesticides, Propellants, VOCs, POL, Chemical Agents

Media of Concern: Groundwater, Soil, Sediment, Surface Water

Completed Removal (REM)/Interim Remedial Action (IRA)/Remedial Action (RA):
AAML01, 02; AAOA01, 02, 03, 04, 07, 08, 12, 13; AAWB01, 03; APGS00; EABR03A, 03-B, 07-A, 07-B, 11-B, 11-H, 11-I, 15-A, 15-B, 15-C, 18-A, 18-B, 18-C, 18-D, 18-E, 35-A, 35-B, 36-A, 36-B; EACC1A-B, 1E, 1G-B, 1H-E, 1H-F, 1L-A, 3D, 3J,3N, 4A, 6; EACI00, 01-A, 01-C, 02-A, 02-C, 03, 04-B, 04-C, 04-D, 05-D, 05-E, 06-A, 06-B, 06-C, 08; EAGQ00, 01-A, 01-H, 01-I, 02-A, 02-B, 02-C, 02-D, 03-A, 03-B, 03-D, 03-E; EAJF00, 05, 05-A, 05-B; EALC00, 05-A, 05-C, 09-B, 09-C, 13-A, 13-B, 13-C, 20; EANS01-A, 01-C, 01-D, 01-F, 01-G, 01-H, 01-K; EAOE04, 08, 16, 19, 23, 24, 50; EAOF03, 04; EAWW02-E, 06, 14-C, 21-E
(Note: multiple IRAs have been conducted at some sites included in this list.)

Total IRP Funding:

Prior Year Funds (up to FY05)	$ 528,416,597
Current Year Funding (FY06)	$ 19,773,709
Future Funds (FY07+)	$ 189,451,000
Total	$ 737,641,306

Duration of IRP:

IRP Inception	1976
RA Construction Completion	2012
IRP Completion	2040

IRP Contamination Assessment

IRP Contamination Assessment Overview:

Past chemical warfare agent and hazardous material disposal practices and operations at APG yielded a number of SWMUs from which hazardous wastes or constituents have migrated resulting in environmental contamination, in particular groundwater contamination, that require US Army cleanup actions. These SWMUs include burn areas, salvage yards, dumps and surface disposal sites, landfills, contaminated buildings, industrial discharges, underground storage tanks (USTs), contaminated groundwater, and storage areas.

As part of the site assessment stage of the IRP, an initial Records Search Study was conducted in July 1976 by USAEC (USATHAMA), the key APG IRP executing agency until 1983. This records study identified eight areas of contamination and recommended three areas for preliminary surveys and two for further monitoring. An additional Installation Assessment of the APG-AA and an Environmental Survey of the APG-EA were conducted by USAEC (formerly known as USATHAMA) from 1976 through 1983 to confirm the findings of the 1976 Records Research Study. The studies verified contamination or potential contamination by chemical munitions, manufacturing wastes, and Chemical Warfare Materiel (CWM) in Westwood, Canal Creek Drainage Area, Gunpowder Neck Test Areas, Carroll Island, Graces Quarters, Nike Site, and Lauderick Creek; migration of chemical contamination into the waters surrounding the APG-EA at Canal Creek Drainage Area, Old O-Field, and J-Field; and the potential for chemical contamination in the water surrounding the APG-EA at Carroll Island, Graces Quarters, and the remaining Gunpowder Neck Fields.

Regulatory oversight of the investigations and remedial work at APG from 1984 to 1990 was through RCRA and a RCRA Corrective Action Permit issued to APG by EPA Region III in 1986 and renewed in1988. RCRA Facility Assessments of the APG-EA and APG-AA completed in 1989 and 1990, respectively, identified over 300 SWMUs. With the signing in March 1990 of the FFA between the EPA and US Army, these SWMUs were combined into 13 geographical areas of concern (i.e. study areas), in which IRP efforts would be focused. The clusters, operable units, and subdivided areas within each of the study areas were assigned individual Army Environmental Database-Restoration (AEDB-R) numbers. The APG IRP has a total of 253 sites entered into AEDB-R (231 in the APG-EA, 20 in the APG-AA, one site which addressed the installation shorelines prior to FY97, and one site which addresses all Performance-Based Contracts (PBCs) awarded for APG). Potential chemicals of concern include volatile organic compounds, semi-volatile organic compounds, pesticides and PCBs, metal, radiological constituents, explosives-related compounds, and CWM.

Since March 1990, APG initiated or finalized numerous studies, assessments, and investigations for each of the identified study areas as part of the remedial compliance process stipulated by the FFA and CERCLA. In conjunction with these environmental studies, IRP efforts also focused on the initiation of remedial and removal actions at the study areas. To date, 101 removal actions have been completed (not including the removal of 18 USTs using non-Defense Environmental Restoration Account (DERA) funds). These actions include the removal and incineration of soil contaminated with PCBs and pesticides, excavation of disposal pits, installation of warning signs, fences and erosion controls, and the removal of contaminated surface material.

Records of Decision (RODs) issued in FY91 include two sites (AAWP01 – White Phosphorus Underwater Munitions Burial Area No Further Action and EAOF01-Old O-Field OU1 Groundwater Extraction and treatment) were issued in FY91, and for a third site (AAML01-Michaelsville Landfill Cap and Cover Installation) in FY92. In FY95, RODs for two sites (EAOF02 – Old O-Field Source Area OU2 Permeable Infiltration Unit (PIU) Installation and EACC1H-E – Building 103 Dump OU1 Cap Installation) were published. APG issued RODs for four OUs in FY96: EACC1L-A – Interim Remedial Action at the Building 503 Smoke Pilot Plant Burn Sites Soil OU; EACI01-A,C; EACI02-A, C; EACI03; EACI04-B, C, D; EACI05-D, E; EACI06-B; EACI08 – Interim Remedial Action at Carroll Island OUA (Disposal Sites); EAJF05 & EAJF05-A – Remedial Action at J-Field Soil OU; and EANS01-A-K – Remedial Action at Cluster 1, Former Nike Missile Site. In FY97, APG published three RODs: AAML02 – Michaelsville Landfill Groundwater OU 2; EAOF03 – O-Field Watson Creek OU3 (Limited Action for Sediment and Surface Water); and EACC3N – Beach Point Groundwater OU. No RODs were published in FY98. In early FY99, RODs for two sites (EACC4A – Interim Remedial Action at the Canal Creek Groundwater OU and EABR03-A – Old Bush River Road Dump Soil Cover Installation) were published. A final ROD was published in FY00 for the Final Remedial Action for the East Branch Canal Creek Area Plume in APG-EA, and for OU1 of the Western Boundary Study Area. In FY01, a final ROD was published for the Carroll Island and Graces Quarters CWM and Hazardous Substances (OUB), as well as the final ROD for the J-Field Study Area (all sites except the Burn Pits Soil OU previously addressed). No RODs were published in FY02. In FY03, a ROD was published for remedial action at Other Lauderick Creek Clusters, which includes the Cluster 5 Concrete Slab Test Area at which remediation is underway. No RODs were published in FY04 or FY05. In FY06 final RODs were published for the Westwood Study Area Clusters 2, 6, 10, 14 and 21; Other Aberdeen Areas Six Groundwater Sites; and Other Aberdeen Areas Five Sediment Sites.

IRP Cleanup Exit Strategy:

During FY07, the focus will be on awarding performance based contracts (PBCs) for all sites with the exception of the Other Edgewood Areas sites. The PBCs will provide an accelerated and streamlined pathway to achieving RC/RIP status. The focus during FY08 will be to define exit strategies for sites in the RA(O) phase for which exit strategies were not defined in the existing RODs. During FY09, exit strategies for LTM sites will be defined. Specific cleanup strategies for each site are included in the Site Descriptions section of this IAP document.

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ABERDEEN PROVING GROUND

Installation Restoration Program Site Descriptions

Michaelsville Landfill - Operable Unit 1 (Source) AAML01

SITE DESCRIPTION

Michaelsville Landfill **-** Operable Unit 1 addresses the contamination source at the Michaelsville Landfill. Michaelsville Landfill is located in the north-central portion of the APG-AA and is a 20-acre, unlined municipal-type landfill. Operations at the landfill began in 1969 and continued until its closure in 1980.

Previous studies of the landfill operations indicate that trench and fill methods were used for waste disposal. The majority of the materials reportedly disposed of in Michaelsville Landfill were domestic trash and trash from non-industrial sources at APG. Other materials that may have been disposed of in limited quantities include solvents, waste motor oils, PCB transformer oils, wastewater treatment sludge, pesticides, insecticides, and rodenticides. Michaelsville Landfill was listed on the National Priorities List (NPL) in 1989.

In June 1992, a ROD was published for this OU which recommended installation of a landfill cap. The installation of the cap was completed in August 1994.

The Michaelsville Landfill Close Out Report was approved by EPA in 2002. EPA has reported that there is an indefinite delay in the delisting of this site off of the NPL.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS: Trash, Solvents, Oils, Sludge, Pesticides, Insecticides, Rodenticide

MEDIA OF CONCERN: Soil, Sediment, Groundwater, Surface Water
Soil, Groundwater

Phases	Start	End
PA	198011	198909
SI	198011	199009
IRA	199104	199106
RI/FS	198712	199206
RD	199207	199209
RA(C)	199304	199408
LTM	199409	203709

RC DATE: 199408

CLEANUP STRATEGY

Current actions for the site include inspections and maintenance of the landfill cap.

Michaelsville Landfill- Operable Unit (Groundwater) AAML02

SITE DESCRIPTION

Michaelsville Landfill **-** Operable Unit 2 addresses sediment, surface water, and groundwater contamination at and near the Michaelsville Landfill. Michaelsville Landfill is located in the north-central portion of the APG-AA and is a 20-acre, unlined municipal landfill that was capped in 1994.

In September 1997, a ROD was signed for OU2 that requires long-term monitoring of the site, annual sampling, and the establishment of a one-quarter mile drinking water well restriction zone.

In FY99, the first round of sampling was completed. Generally, contaminant levels have decreased since the RI although near RI concentrations of VOCs and elevated levels of iron, manganese, and ammonia were detected in the groundwater. Detections of contaminants in surface water generally decreased although a few metal concentrations increased. While sediment sampling results showed decreases in SVOCs, some inorganic levels have increased. The third round of surface water, sediment and groundwater sampling was completed in FY02. A groundwater only sampling was conducted in March 2005 which indicated the same trends as the previous LTM of groundwater.

The Five-Year Review was completed and signed by EPA in 2003. The monitoring plan for ML was revised in June 2004.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS OF CONCERN:
VOCs, SVOCs, Metals, Inorganics, Ammonia

MEDIA OF CONCERN:
Groundwater

Phases	Start	End
PA	198011	198909
SI	198011	199009
RI/FS	199302	199709
RA(C)	199210	199709
LTM	199709	202709

RC DATE: 199709

CLEANUP STRATEGY

The next monitoring event scheduled for September 2007.

Other Aberdeen Areas - Landfills
AAOA01

SITE DESCRIPTION

The Other Aberdeen Areas - Landfills are comprised of dump areas including the Churchville Test Course Dump, the Old Dump at Swan Creek, the Old Chemical Dump on Spesutie Island, and the Woodrest Creek Dump. These landfills are located within the APG-AA with the exception of the Churchville Test Course Dump which is located approximately 8 miles north of APG. These landfills have been grouped together due to similarities into one AEDB-R number.

A Removal Action was conducted at the Old Dump at Swan Creek in 1996 to cover waste material onsite and protect against erosion. Phase I RI results indicate lead and arsenic contamination in the soil at the Old Dump at Swan Creek. Metals were detected in the soil and surface water and metals and pesticides were detected in the sediments. . Nine metals including lead and arsenic were detected in the sediments exceeding the screening criteria at Woodcrest Creek Dump.

The Phase II RI report was completed in April 2003.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
Metals

MEDIA OF CONCERN:
Soil, Sediment, Surface Water, Groundwater

Phases	Start	End
PA	198011	198909
SI	198011	199009
RI/FS	199010	200704
IRA	199309	199609
RD	200409	200708
RA(C)	200409	200809
LTM	200904	201809

RC DATE: 200809

The PBC for the Other Aberdeen Areas was awarded in Sept 2004 which covers RI/FS and RA. Two years of LTM after RA(C) is also included. This cost is captured under the PBC at APG. The remaining LTM funding requirements are not covered by the PBC and are captured in the CTC.

CLEANUP STRATEGY

Only 2 landfill sites currently require remedial action, Woodrest Creek Dump and Swan Creek Dump. High levels of metals (arsenic and lead) and PAHs have been found at Woodcrest Dump. Some surface soils will be removed at the Swan Creek Dump due to high levels of metals.

The PP and ROD are expected to be completed in FY07. Three years of monitoring will be required upon completion of RA(C). Site inspections will continue for 10 years upon completion of RA(C).

Other Aberdeen Areas - Surface Disposal Areas
AAOA02

SITE DESCRIPTION

The Other Aberdeen Areas – Surface Disposal Areas once consisted of the Sandblasting Area near Bldg 523, the Spesutie Island Burn Trench, the Metal Barricade at Bldg 1122, the Chemical Dump Ponds on Spesutie Island, the Bldg 705 CSTA Fragmentation Pit, the Bldg 510 Barrels, and the Poverty Island Potential Mine Burial Site. The Other Aberdeen Areas – Surface Disposal Areas are also comprised of battery storage/disposal areas at Abbey Point and Spesutie Island. These sites have been grouped together due to similarities into one AEDB-R number. Removal of old batteries at Spesutie Island and Abbey Point has been conducted. One additional site, DRMO Metal Scrap Yard sediment/soil media only - was added to AAOA02 in FY04.

A soil removal was conducted at the Sandblasting Area near Bldg 523 and the Bldg 510 Barrels. Phase I RI results for the discarded battery site at Spesutie Island indicated metal contamination in site sediments. Linear geophysical anomalies were revealed at the Spesutie Island Burn Trench and determined to be old unmapped utilities. High concentrations of manganese were detected in the groundwater near the Spesutie Island Chemical Dump Ponds. Elevated concentrations of zinc and nickel were found in sediment samples obtained at the Old Chemical Dump on Spesutie Island.

Phase II RI for OAA was completed in April 03 and a number of sites were determined to require no additional work/remediation.

In September 2004, Other Aberdeen Areas was contracted under a PBC that would cover RI/FS, RD and RA(C). The costs were captured under site # PBC at APG. Human Health and Baseline Ecological Risk Assessments were completed in 2005. Five sediment sites were targeted for remediation: Site 8, Discarded Batteries at Abbey Point Navigation Light; Site 9, Discarded Batteries at Spesutie Island Navigation Light; Site 12, Old Chemical Dump on Spesutie Island; Site 16, DRMO Metal Scrap Yard (sediments only) and Site 17, Silver Contaminated Ditch in Transonic Range Area. Some of the chemicals of concern include mercury, zinc, arsenic, cadmium, copper, lead, silver and methylmercury.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN:
Metals

MEDIA OF CONCERN:
Sediment

Phases	Start	End
PA	1998011	198909
SI	198011	199009
RI/FS	199010	200604
IRA	199406	199608
RD	200503	200606
RA(C)	200505	200609

RC DATE: 200609

CLEANUP STRATEGY

The ROD was signed in April 2006. Excavation and off-site disposal is the anticipated strategy.

Other Aberdeen Areas – Underground Storage Tanks AAOA08

SITE DESCRIPTION

The Other Aberdeen Areas – Underground Storage Tanks (USTs) are comprised of hazardous waste USTs at Bldg 4726; waste oil storage tanks at Bldgs. B402, 436, 456, 615, 2458, 3329, 3505, 4036, 5046, 2379, 4728; and Tower Road. These sites were grouped together due to similarities into one AEDB-R number. Bldg 525, M600, Bldg 507 and Bldg 3327 were added to AAOA08 in FY04.

Several USTs and contaminated soil have been removed from these locations. Phase I RI sampling of the Bldg 2458, 3329 and 3505 USTs confirmed the presence of low levels of PCE/TCE in the groundwater; however, adequate penetration past the UST monitoring well screen depths was not achieved by the geoprobe samplers. Solvent contamination was found in the groundwater under Bldg 3505.

The RI and FS reports have been completed.

An in situ chemical oxidation pilot study was conducted in 2002 at Bldg 525 on an area of 180 x 120 ft where CVOCc levels were highest. The study reduced 9.2 lbs of CVOCs. However, TCE levels can still be found up to 647 ppb.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN:
VOCs, Solvents

MEDIA OF CONCERN:
Groundwater

Phases	Start	End
PA	198011	198909
SI	198909	199009
IRA	199005	199408
RI/FS	199910	200602
RD	200409	200605
RA(C)	200409	200609
RA(O)	200409	203309

RIP DATE: 200609
RC DATE: 203309

The PBC for the Other Aberdeen Areas was awarded in Sept 2004 which covers RI/FS, RD and RA. This cost is captured under the PBC at APG. The remainder of RA(O) funding requirements is not covered by the PBC and are captured in the CTC.

CLEANUP STRATEGY

Under the PBC, AAOA08 now includes 6 Groundwater Sites: Site 16, DRMO Metal Scrap Yard (groundwater); Site 23, Building 525; Site 28f, Building 3327 UST Site; Site 29, Tower Road Site; Site 32, Building 507; and Site 33, Building M600. Chlorinated volatile organic compounds impacting the sites include TCE, PCE, 1,1-DCE and VC. Site closure is planned under the PBC. The ROD was signed and made final in February 2006. The preferred approach for all the groundwater sites is Enhanced Bioremediation – Recirculation with optional addition of passive biobarriers.

Other Aberdeen Areas - Firing Ranges
AAOA12

SITE DESCRIPTION

The Other Aberdeen Areas - Firing Ranges consist of the Pistol Range and the Known Distance (KD) Range. These sites were grouped together due to similarities into one AEDB-R number.

Only one area of soil contamination was identified in the Pistol Range. Numerous metals of concern were detected in the surface water at the KD Range; no sediment samples were taken. Metals and radiological contamination of concern were also detected in soils and groundwater at the KD Range. The Phase I RI was completed in FY02 and Phase II for OAA was completed in 2003. , The FS reports for both of these sites were completed in FY05. COCs are antimony, arsenic and lead.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS OF CONCERN:
Metals

MEDIA OF CONCERN:
Soil

Phases	Start	End
PA	198011	198909
SI	198011	199009
IRA	199406	199406
RI/FS	199910	200704
RD	200409	200706
RA(C)	200409	200709

RC DATE: 200709

CLEANUP STRATEGY

The PBC for the Other Aberdeen Areas was awarded in Sept 2004. Under the PBC, AAOA12 now includes Site 30a, Pistol Range and Site 30b, Known Distance Range. Site closure is planned under the PBC. The ROD is anticipated to be completed by late 2006.

Removal of sediment and soil is expected at the Known Distance and Pistol Range.

Western Boundary Area Groundwater - Operable Unit 1 AAWB01

SITE DESCRIPTION

Operable Unit 1 addresses contaminated groundwater in the southwestern portion of the Western Boundary Study Area, near the Harford County production wells.

Results of the ongoing RI/FS activities in early FY93 confirmed trichloroethylene (TCE) contamination of two Harford County drinking water wells in Perryman. In January 1993, the US Army, in coordination with the EPA, State of Maryland, and Harford County officials, began construction of a granular activated carbon (GAC) treatment system to remove the TCE from the two wells. The system began operation in June 1993. Because of the risk of offpost wells becoming contaminated, the preferred alternative from the Proposed Plan for this OU is GAC treatment of all groundwater from the Perryman Well Field.

A ROD was signed in July 2000, and required the construction of a new treatment plant to treat all county production wells and groundwater monitoring. The new plant is located off-post and was completed in Oct 2003. All drinking water wells located in the Perryman Well Field are treated by the new plant. Therefore, the relative risk for this site has been reduced from High Relative Risk to Low Relative Risk.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS OF CONCERN:
VOCs

MEDIA OF CONCERN:
Groundwater

Phases	Start	End
PA	198011	198909
SI	198011	199009
IRA	199208	199306
RI/FS	199309	200006
RD	200010	200111
RA(C)	200204	200309
RA(O)	200310	203709

RIP DATE: 200310
RC DATE: 203709

CLEANUP STRATEGY

Operation of the GAC system and groundwater monitoring will continue indefinitely.

Phillips Army Airfield Landfill/ City of Aberdeen Wells - Operable Unit 2 AAWB02

SITE DESCRIPTION

Operable Unit 2 addresses the groundwater near Phillips Army Airfield (PAAF) Landfill and City of Aberdeen wells located north of the landfill. The PAAF Landfill (~35 acres) has been used since the 1950s for the disposal of construction debris, oils, solvents, and general refuse. Soil cover was placed over the landfill. The landfill is currently closed. A French Land Mine Training Area is also part of this area.

The City of Aberdeen wells and nearby monitoring wells were sampled in 1998 & 2001. An explosives compound, RDX, was detected in one of the City of Aberdeen wells (CAP7). Low solvent concentrations were recently detected. Additional geoprobes were subsequently installed in an attempt to identify the RDX. No RDX plume was found.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS OF CONCERN: VOCs

MEDIA OF CONCERN: Groundwater

PHASES	Start	End
PA	198011	198909
SI	198011	199009
RI/FS	199309	200809

RC DATE: 200809

Geoprobes and monitoring wells sampled in 2001-2005 revealed perchlorate detections in the groundwater and soil. Perchlorate was also detected in City of Aberdeen drinking water wells.

The standard for perchlorate in drinking water had not been established by EPA or MDE until February 2005 when EPA passed a reference dose (RFD) of 24.5 ppb for drinking water. In January 2006, DOD established a policy that set the level of concern for perchlorate at 24 ppb. Because perchlorate levels in groundwater at AAWB02 do not exceed 24 ppb, the risk assessment concluded that there was no risk at this site and therefore, sampling of the City wells will be discontinued.

Based on an advisory issued by the State of Maryland, the City of Aberdeen installed a treatment system to reduce perchlorate concentrations in the drinking water.

CLEANUP STRATEGY

Complete ROD and request regulatory approval for site closure in 2008.

Other Media - Operable Unit 3 (Surface Water, Sediment, & Soil) AAWB04

SITE DESCRIPTION

Operable Unit 3 addresses sediment, surface water, and soil within the Western Boundary Study Area. Environmental sampling within OU3 has been accomplished to support a Human Health Risk Assessment for the Western Boundary Study Area and an Ecological Study for the entire Aberdeen Area (AA).

The collected data was screened and validated. The Human Health Risk and Ecological Risk Assessments have been completed and approved. As a result of this assessment, 120cy of soil will be excavated and disposed off site. This site may be reevaluated after the Range Rule is finalized.

Another site, Site 25, Shell Washout Wastewater Ditch at Building 700B, where explosives may be an issue in the groundwater and sediments, will be addressed in AAWB04. A draft FS for Site 25 was completed and approved by MDE in December 2005. EPA has yet to provide final concurrence.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS OF CONCERN:
Pesticide

MEDIA OF CONCERN:
Soil

Phases	Start	End
PA	198011	198909
SI	198011	199009
RI/FS	199801	200807
RD	200807	200808
RA(C)	200808	200809

RC DATE: 200809

CLEANUP STRATEGY

Soil/sediment removal will be required. This ROD will also address AAWB02 (groundwater unit near the City of Aberdeen wells).

Complete Proposed Plan and ROD for this site during FY08.

A second ROD will be completed under Site 25, Shell Washout Wastewater Ditch at Building 700B. This ROD is expected to be completed in the summer of 2007.

Old Bush River Road Dump - Cluster 3
EABR03-A

SITE DESCRIPTION

The Old Bush River Road Dump (OBRRD) is a 1.5 acre, WWI-era landfill containing munitions, burnt gas masks, chemical laboratory glassware, and process equipment. Rain and erosion were causing metals in the soil to move from the surface soil into a nearby marsh; additionally, two munitions were recovered during previous environmental work performed at the site.

The final ROD for the construction of a soil cover over the OBRRD was signed in June 1999. The soil cover is intended to reduce infiltration, prevent erosion and the subsequent migration of metal contamination into the nearby marsh, and provide a barrier against potential detonation of UXO. A clay confining layer exists under the landfill; therefore, groundwater contamination is not a concern. Construction of the soil cover began in October 1999, and was completed in October 2000.

LTM began in FY00, and the site was evaluated under the APG-EA five-year review published in FY03.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN:
Metals, UXO

MEDIA OF CONCERN:
Soil, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
IRA	199011	199709
RI/FS	199105	199902
RD	199902	199909
RA(C)	199909	200011
LTM	200011	203709

RC DATE: 200011

CLEANUP STRATEGY

LTM will continue indefinitely with five year toxicity testing. The next five-year review is scheduled for completion in FY07.

Transformer Storage - Cluster 3
EABR03-B

SITE DESCRIPTION

The Transformer Storage Area is a former Directorate of Public Works (DPW) site that was used from 1964 to 1989 for utility storage, including storage of transformers, and housed a former gasoline station. The gas station was demolished in 1977. This site also housed a sump containing a pump for dispensing fuel and a 15,000-gallon UST. The UST and sump were removed in 1991.

Samples collected at multiple depths at this site indicate the presence of lead at 4,650 mg/kg - concentrations in excess of the suggested EPA cleanup level and which may pose an ecological risk. The source for the lead contamination was historical storage of lead acid batteries. The soil is believed to have been disturbed following contamination, as no correlation between lead concentration and depth was noted. A Feasibility Study has been completed defining the extent of contamination and assessing remedial alternatives. The ROD was signed September 2005 and requires cleanup to 1,000mg/kg.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN:
Lead

MEDIA OF CONCERN:
Soil

Phases	Start	End
PA	197606	198912
SI	197606	198912
IRA	199604	200109
RI/FS	199105	200509
RD	200507	200606
RA(C)	200507	200702
LTM	200703	203703

RC DATE: 200702

CLEANUP STRATEGY

Lead-contaminated soil will be removed and LUCs will be implemented for thirty years. This site will be funded under the PBC for the first five years.

26th Street Disposal Site (1) - Cluster 11
EABR11-A

SITE DESCRIPTION

This site consists of a mask canister and charcoal burning area on the west side of 26th Street. Historical aerial photography from 1929 indicates activity in the mask canister burning area, which continued until the late 1960s or 1970s. This disposal operation involved burning off-spec and unserviceable gas mask containers within their wooden box packaging. The metal residuals were left in place and were gradually filled over by a thin cover of soil.

Test pit samples collected from this area during Phase I of the FFS contained metals above RBC levels (e.g., lead at 1,240 mg/kg, chromium at 182 mg/kg, and zinc at 349,000 mg/kg).

CLEANUP STRATEGY

It is anticipated that the soil/waste will be excavated with no LTM required. This site is funded under PBC at APG.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN:
Metals

MEDIA OF CONCERN:
Soil

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199105	200709
RD	200507	200809
RA(C)	200507	200909

RC DATE: 200909

26th Street Disposal Site (2) - Cluster 11
EABR11-B

SITE DESCRIPTION

This open dump site located to the east of 26th Street is approximately 100 to 150 ft in diameter. The time period in which dumping occurred is unknown; however, some dumping may have occurred as recently as the 1970s. The Edgewood Area RFA field inspection of the site identified miscellaneous waste and medical/biological laboratory waste. Removal of potentially contaminated surface and subsurface material began in 1993. In 1996, two drums containing cobalt-60 and cesium-137 were located. Removal of the waste and excavation of the soil continued, with 1,000 tons of radioactive waste removed.

The site was closed-out, sloped, and seeded following release from the NRC license in July 1998. Pesticides were detected in sediments at concentrations above ecological risk levels (e.g., DDTr at 9,370 mg/kg).

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN:
Pesticides

MEDIA OF CONCERN:
Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
IRA	199311	199807
RI/FS	199105	200709
RD	200507	200809
RA(C)	200507	200909

RC DATE: 200909

CLEANUP STRATEGY

It is anticipated that the contaminated soil will be removed with no LTM required. This site is funded under PBC at APG.

22nd Street Landfill - Cluster 11
EABR11-C

SITE DESCRIPTION

The 22nd Street Landfill comprises 8.3 acres of the Bush River Study Area and is the largest landfill on the Edgewood Peninsula. This site was a marsh that had been used for landfill operations during the 1960s through early 1970s. The landfill contains hazardous waste, including a reported bromobenzylcyanide tank, sulfur sludge, laboratory glassware, and demolition debris. Efforts to dig test pits in the landfill were abandoned, as no area free of metallic anomalies could be located.

VOCs, methane, and carbon dioxide with freon were detected in landfill gas samples. Soil in the stream to the south of the landfill contains pesticides at concentrations above ecological risk levels (e.g., DDTr at 8,168 mg/kg). Surface water samples collected around the landfill contain chromium (32.4 mg/L), copper (65.2 mg/L), zinc (606 mg/L) and chlorinated solvents (51 ug/L TVOCs in surface water and 163 ug/L TVOCs in sediment).

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN:
Pesticides, Metals, VOCs

MEDIA OF CONCERN:
Soil, Groundwater, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199105	200709
RD	200507	200809
RA(C)	200507	200909
LTM	200910	203009

RC DATE: 200909

CLEANUP STRATEGY

The EPA presumptive remedy for military landfills would indicate future capping and/or containment of this site. A wetland area will be constructed to control potential discharge to the Bush River. LTM will continue indefinitely. The first five years of this site will be funded under the PBC at APG.

Surficial Aquifer - Cluster 11
EABR11-F

SITE DESCRIPTION

The surficial aquifer in the Southern Bush River peninsula is a complex sequence of interfingered sands, clays, and silts. The aquifer at many locations is divided into an upper and lower section by laterally discontinuous silt and clay layers, which is very important to the hydraulic continuity of the surficial aquifer. A massive clay confining unit defines the base of the surficial aquifer. Groundwater sampling was performed within Cluster 11 during RI and FFS field activities. Cluster 11 contains a portion of the large VOC plume which underlies the Southern Bush River Area. Six potential VOC source areas have been identified within Cluster 11. VOC contamination within the groundwater plume predominantly ranges from 1 to 99 ppb total VOCs; however, two hot spots in Cluster 11 contain concentrations of 83,810 ppb and 17,626 ppb total VOCs. Industrial scenarios for future cancer risks by groundwater ingestion were estimated as $3x10^{-3}$ from 1,1,2,2-TECA and carbon tetrachloride. The non-cancer hazard index was greater than one (five) from VOCs.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN:
VOCs

MEDIA OF CONCERN:
Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199105	200809
RD	200509	200909
RA(C)	200509	201009
RA(O)	200509	201109
LTM	201110	204109

RIP DATE: 201009
RC DATE: 201109

CLEANUP STRATEGY

The cleanup strategy will be to remediate source areas that are contributing to that portion of the plume where the aquifer is usable (i.e., not adjacent to the Bush River or beneath the 22nd Street Landfill). The remedy for the 22nd Street Landfill will likely include a constructed wetland that will prevent VOCs from the most contaminated portion of the plume from impacting ecological receptors. This site will be funded under the PBC at APG for the first five years.

Radioactive Material Disposal Facility
EABR11-I

SITE DESCRIPTION

EABR11-I consists of the Bush River Radioactive Material Disposal Facility (BRRMDF), the Toxic Gas Yard (TGY) Ton-Container Steamout Site, several associated buildings, and an open storage yard. Constructed in 1931, the Army first used the BRRMDF for chemical agent storage. In the late 1950s or early 1960s, the BRRMDF became a dedicated facility for radioactive waste material processing, packaging, and temporary storage prior to disposal. Actual disposal of radioactive waste has never occurred at this site. Radioactive waste storage operations still occur in the open storage yard and designated buildings under a NRC license. The TGY Ton-Container Steamout Site was constructed during 1938 and operated intermittently until the late 1950s or early 1960s. Operations at this facility included the decontamination of one-ton cylinder containers used to store mustard, chloropicrin, Lewisite, and other chemical agents.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
Electrical resistance with soil vapor extraction.

MEDIA OF CONCERN:
Wastewater, Soil

Phases	Start	End
PA	197606	198912
SI	197606	198912
IRA	199307	200609
RI/FS	199105	200709
RD	200507	200809
RA(C)	200507	200909

RC DATE: 200909

Approximately two-thirds of the soil at the BRRMDF is contaminated with Cs-137, with significant non-removable Cs-137 contamination associated with drains in two buildings, three pits, sewer pipes, and a sump. The highest Cs-137 value (i.e., 4,600 pCi/g) was found in the top six inches of soil. Wastewater within a liquid waste concentrator contains concentrations of Cs-137, uranium-238, and strontium-90 above EPA Maximum Contaminant Levels (MCLs). Arsenic (max conc. 230 mg/kg) at concentrations above the Maximum Reference Value and Risk-Based Concentration (RBC) for industrial soil exists in the soil throughout the site. Mustard agent degradation products and solvents were detected in soil gas samples collected in the northeast corner of the site.

CLEANUP STRATEGY

A removal action to address the Cs-137 in soil is nearly complete, and will result in removal of the site from the NRC license. The removal action is also addressing arsenic in soil, which is largely co-located with the Cs-137. Depending on residual levels of arsenic, it is possible that additional remediation will not be necessary. This site will be funded by the PBC for the first five years with no LTM requirements.

Kings Creek Chemical Disposal Site - Cluster 15
EABR15-A

SITE DESCRIPTION

The Kings Creek Chemical Disposal Site lies adjacent to Kings Creek and outside the fenced portion of Southern Bush River. As a former chemical material disposal area, visual inspections of the site indicate that open burning and drum storage were the primary methods of disposal. The types of material found at the site suggest activity occurred during the 1920s and 1930s.

The Army has recovered a large amount of UXO from this site, including Livens projectiles, Stokes mortar rounds, and badly corroded Stokes mortar fuses.

Additional scrap metal and drums were removed during a 1992 action to remove waste material from the shoreline. Thirty-five of the drums contained the tear gas CN and 12 contained an unknown, inorganic crystalline solid. Sampling identified metals contamination in the surface soil above RBCs (e.g., arsenic at 158 mg/kg). Small areas of buried material adjacent to the western boundary of the site were also identified.

A pallet of glassware containing chemical warfare agents was removed and disposed of in spring 2003.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN:
Metals, Buried Materials, CWM

MEDIA OF CONCERN:
Soil

Phases	Start	End
PA	197606	198912
SI	197606	198912
IRA	199206	199709
RI/FS	199105	200709
RD	200507	200809
RA(C)	200507	200909
LTM	200910	203909

RC DATE: 200909

Temporary shoreline stabilization was completed in Spring 2003.

CLEANUP STRATEGY

The likely remedy will be a selective soil cover combined with a constructed wetland. This site will be funded under PBC at APG for the first five years. LTM will continue indefinitely.

30th Street Landfill - Cluster 15
EABR15-B

SITE DESCRIPTION

The 30th Street Landfill lies east of and adjacent to the Kings Creek Chemical Disposal Site along the north shoreline of Kings Creek. Historical aerial photography indicates activity at the 2.3-acre landfill during the late 1960s or 1970.

The 1992 removal action conducted at the Kings Creek Chemical Disposal Site detected large quantities of buried metallic objects in saturated, organic marsh sediments along the western edge of the landfill. Visual inspections of the site revealed the presence of building demolition debris. The debris is mostly covered, but exposed at some points along the edges of the fill site. Chloride contamination was identified downgradient of the site.

Small numbers of chemical munitions were discovered at the landfill's edge.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN:
Buried Material, UXO, Chemical Munitions

MEDIA OF CONCERN:
Soil, Surface Water

Phases	Start	End
PA	197606	198912
SI	197606	198912
IRA	199604	199709
RI/FS	199105	200709
RD	200507	200809
RA(C)	200507	200909
LTM	200910	203909

RC DATE: 200909

CLEANUP STRATEGY

It is anticipated that a cap will be placed over the waste material. Shoreline protection measures will be implemented to prevent waste material from eroding into Kings Creek. This site will be funded under PBC at APG for the first five years with LTM to continue indefinitely.

Surficial Aquifer - Cluster 15
EABR15-D

SITE DESCRIPTION

The surficial aquifer in the Southern Bush River peninsula is a complex sequence of interfingered sands, clays, and silts. The aquifer at many locations is divided into an upper and lower section by laterally discontinuous silt and clay layers, which is very important to the hydraulic continuity of the surficial aquifer. A massive clay confining unit defines the base of the surficial aquifer. Groundwater sampling was performed within Cluster 15 during RI, Phase I FFS, and Phase II FFS field activities. Cluster 15 contains a portion of the large VOC plume which underlies the Southern Bush River Area. One potential VOC source area has been identified within Cluster 15.

CLEANUP STRATEGY

Remediation of the Cluster 15 surficial aquifer is anticipated based upon the results of the groundwater monitoring. Source removal (in-situ treatment of the vadose zone and aquifer) and monitored natural attenuation are planned. This site will be funded under PBC at APG for the first five years.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN:
VOCs

MEDIA OF CONCERN:
Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199105	200809
RD	200510	200909
RA(C)	200510	201010
RA(O)	200510	204009

RIP DATE: 201010
RC DATE: 204009

Bush River Dock (E2396) - Cluster 18
EABR18-E

SITE DESCRIPTION

During WWI, the Army shipped containers of bulk chemical agent and munitions by loading the items onto transport barges at the Bush River Dock. During WWII, captured foreign munitions were unloaded to flat cars on rails at the dock.

Several DPT, pore water, and sediment samples were collected off the sides and end of the Dock during the FFS to delineate the extent of porewater and groundwater contamination. High total VOC contaminant concentrations exist off the end of the dock, which are possibly attributable to a large metallic object in the sediments, but do not appear to be related to the on-shore VOC contaminants. VOC contamination has also been detected offshore within the organic silts. The highest concentration of VOCs (i.e., 15,674 ug/L) was measured off the end of the Dock at a depth of 13 to 17 ft.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN: VOCs, CWM Deg. Products

MEDIA OF CONCERN: Soil

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199105	200809
IRA	199604	199709
LTM	200810	203809

RC DATE: 200809

CLEANUP STRATEGY

Long term monitoring will be completed for thirty years to track the levels of contamination released to sediments and surface water. This site will be funded under PBC at APG for the first five years.

Surficial Aquifer - Cluster 18
EABR18-F

SITE DESCRIPTION

The surficial aquifer in the Southern Bush River peninsula is a complex sequence of inter-fingered sands, clays, and silts. The aquifer at many locations is divided into an upper and lower section by laterally discontinuous silt and clay layers, which is very important to the hydraulic continuity of the surficial aquifer. A massive clay confining unit defines the base of the surficial aquifer.

Groundwater sampling was performed within Cluster 18 during RI, Phase I FFS, and Phase II FFS field activities. Cluster 18 contains a portion of the large VOC plume which underlies the Southern Bush River Area. Several potential VOC source areas have been identified within Clusters 15 and 18.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN:
VOCs

MEDIA OF CONCERN:
Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199105	200809
RD	200509	200909
RA(C)	200509	201009
RA(O)	200509	204009

RIP DATE: 201009
RC DATE: 204009

CLEANUP STRATEGY

The likely remedy for this site is source remediation and monitored natural attenuation. This site is funded under PBC at APG for the first five years.

Railroad Yard - Cluster 1A
EACC1A-A

SITE DESCRIPTION

The Railroad Yard is located in the north-central portion of the APG-EA, west of the Hoadley Road Gate. The Railroad Yard consists of multiple railroad sidings (areas used to store rail cars filled with raw materials, supplies and munitions), a locomotive storage and maintenance barn (Building E5762), and storage shed (Building E5760).

The site Ecological and Human Health Risk Assessment sampling efforts were conducted in 1999. The Final Phase II RI Report was submitted in 2004. The Final FS was submitted in May 2005.

The risks to ecological receptors identified in the ERA are limited due to insufficient habitat (i.e., heron are not expected to live in the areas with elevated pesticides, because there are no fish present in the drainage areas). Therefore, remediation of the site is no longer warranted.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS: PAH

MEDIA OF CONCERN:
Soil, Sediment

PHASES	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	198510	200509

RC DATE : 200509

CLEANUP STRATEGY

Land-use controls (LUCs) preventing future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use will be implemented at this site in accordance with the *Record of Decision for 13 Select Sites in the Canal Creek Study Area* (anticipated in FY06) under an existing Performance-Based Contract (PBC). No other actions are planned for this site.

This site is considered Response Complete awaiting Final EPA documentation expected in FY06.

G Street Salvage Yard - Cluster 1A
EACC1A-B

SITE DESCRIPTION

The G St Salvage Yard consists of Bldg E5068, a concrete loading dock, a former fire training area and a salvage yard. The site is located in the north-central portion of the APG-EA, next to the RR Yard and west of the Hoadley Road Gate. From WWI until WWII the site was used as a railroad siding area, or area used to store rail cars filled with raw materials, supplies and munitions. Salvage yard operations were conducted at the site from WWII to the mid-1960s. From 1972 until 1978, a fire-training pit was located at the southeast corner of the salvage yard. Bulk construction materials were also stored at the site. Limited removal actions have been conducted at the G-St Salvage Yard that focused on removing surface debris and debris found in mounds within the project area.

In 1996, a temporary soil cover was placed over a portion of the site as part of a CERCLA Removal Action. The Phase II RI Report was submitted in 2004. The Final FS for the site was submitted in May 2005. Risks exist at the site for soil and groundwater; however, the groundwater plume will be addressed as part of the West Canal Creek Area, Canal Creek Aquifer RI/FS (EACC4A-B). Soil risks to human health are primarily defined by lead hot spots at the Former Fire Training Area; some of the hot spots are as deep as 14 ft (at or near water table). Additional potential risks to human health and the environment exist at the BRDA. Preliminary Remedial Goals (PRGs) have been calculated.

The RAD Risk Assessment has been completed and the HHRA is complete. The Final RAD Risk Assessment has been incorporated into the Final 3 Sites RI. The risk for child residents at the G St. Soils Site (surface and subsurface) exceeded the EPA target risk range for Arochlor 1260, benzo(a)pyrene, 4,4'-DDE, dibenzo(a,h)anthracene, dioxin/furans, and arsenic.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
Lead

MEDIA OF CONCERN:
Soil

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	198510	200709
IRA	199004	199810
RD	200610	200809
RA(C)	200709	200909

RC DATE: 200909

G Street Salvage Yard - Cluster 1A
EACC1A-B

CLEANUP STRATEGY

The ROD for this site is anticipated for completion in FY07.

In order to return the G Street Soils site to an acceptable level for industrial re-use, excavation within the contaminated soils area at the G-Street Salvage Yard and off-site treatment and disposal is proposed. The contaminated soils areas would be excavated to a depth of ~2 ft.

The anticipated remedial action for the BRDA involves excavation of the pit (at a total depth of 9 ft) and off-site disposal. Due to the potential UXO/CWM present in the BRDA pit, this alternative would be conducted under strict safety requirements.

DM Filling Plant – Cluster 1D
EACC1D

SITE DESCRIPTION

The DM Filling Plant is located in the APG-EA, west of the Magnolia Road intersection with Alley Road. Existing buildings within the area include Buildings E5635, E5637, E5639, E5641, E5643, E5645, and E5648. The DM Filling Plant was used for DM candle filling and assembly during 1942 and 1943. Bldg E5648 was the primary production building and used sumps and/or tank pits for the DM manufacturing. Additional buildings were used for a variety of filling/loading purposes including smoke mixing and blending. Bldg E5641 was also used for loading button bombs with a pyrotechnic mixture of red phosphorus, potassium chlorite, and Freon. Two animal holding pens are located at the southern end of the DM Filling Plant Area.

The ecological and human health risk assessments for this site are complete, as are the RI and FS Reports. This site poses no unacceptable risks to human health under an industrial land-use scenario; however, there is potential for unacceptable risks to hypothetical future residents. Potential ecological risks are driving cleanup of arsenic hot-spots at the site. In addition, the rotoclone sump, which includes arsenic contamination, will be cleaned and closed out.

STATUS

REGUALTORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS OF CONCERN:
VOCs

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	198510	200606
RD	200601	200612
RA(C)	200601	200612

RC DATE : 200612

CLEANUP STRATEGY

Uncertainties exist with regard to the actual presence of ecological risks at this site; however, a definitive determination of risk would require more extensive and expensive studies. In order to complete a streamlined response at this site, the Army and regulators have agreed upon soil excavation and off-site disposal as the preferred alternative for this site. Contaminated media from the rotoclone sump will also be removed and properly disposed. LUCs preventing future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use will also be implemented at this site in accordance with the ROD for the 13 Select Sites (Anticipated in FY06. The remedial action will be conducted under a modification to the Westwood PBC (AEDB-R Site# PBC at APG).

Building 87 Complex
EACC1E

SITE DESCRIPTION

The Building 87 Complex (Pilot Plant Complex) is located in a double security-fenced area at the northwest corner of the intersection of Fleming Road and Alley Road. The site consisted of buildings (E5616, E5617, E5618, E5626, E5627, E5632 and E5633) that were constructed around WWI and used for chemical manufacturing during the war. CC2, GB, GA, GD, BX, NM, VX and B-1 dye were all produced at the Building 87 Complex. The area was also used for bulk storage and chemical transfer of agents for use in other R&D facilities. Activity at the 5-acre complex ceased as a process engineering facility in 1986. The buildings were abandoned at that point. In FY97, the Building 87 Complex demolition was funded under Chemical Agent Demilitarization Disposal Defense (CADDD). All of the buildings at this site were demolished in 1999; the E5625 and E5633 sumps were addressed in 1995.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
Solvents, PCBs

MEDIA OF CONCERN:
Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	198510	200804
IRA	199507	199509
RD	200805	200809
RA(C)	200809	200909

RC DATE : 200909

The potential for environmental impact is largely due to the activities using chemicals such as chlorinated solvents and PCBs. Phase I and III RI sampling has been conducted at this site; all media have been sampled and analyzed. Surface soil sampling (including XRF field screening) was also conducted for the risk assessment.

The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the Data Evaluation and Risk Characterization (DERC) Report is in draft form. The RI Report for this site is also available as a draft.

CLEANUP STRATEGY

Groundwater at this site is being evaluated under EACC4A-B. Although the risk assessments for this site are not complete, it is anticipated that the preferred alternative for this site will be soil excavation and off-site disposal. LUCs will also be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use. The ROD for this site is anticipated in FY08.

Building E5604 Area - Cluster 1F
EACC1F-A

SITE DESCRIPTION

The Building E5604 Area is located in the APG-EA on the north side of Fleming Road between Alley Road and 32nd Street. Building E5604 was constructed during WWII for chemical munitions filling. In the late 1960s, mask and filter manufacturing operations were located at Building E5604. Manufacturing activities have not been performed at Building E5604 in recent years; however, testing of individual and collective protection filters was conducted until 1988.

Explosives and agent degradation byproducts were not detected in surface or subsurface soil samples onsite. Phase I and II RI soil sampling has been conducted at this site. In addition, XRF field-screening and surface soil sampling were conducted for risk assessment purposes in 2003. Arsenic levels (8.9 mg/kg) in the surface soil exceeded both industrial RBCs and background ranges.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
VOCs, Arsenic

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	198510	200809

RC DATE: 200809

The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC is in draft form. The RI Report addressing this site is also available as a draft.

CLEANUP STRATEGY

Groundwater at this site is being evaluated under EACC4A-B. Although the risk assessments for this site are not complete, preliminary evaluations of the existing data indicate that remedial action is unwarranted. [If unacceptable levels of risk to human health and/or the environment are identified in the draft HHRA or ERA-DERC, soil excavations and off-site disposal may be required.] However, LUCs may be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use at this site. No other actions are planned at this time. The ROD for this site is anticipated in FY08.

Building 80 Series Smoke Labs - Cluster 1F
EACC1F-B

SITE DESCRIPTION

The Building 80 Series Smoke Laboratories are located in the APG-EA on the north side of Fleming Road between Alley Road and 32nd Street (6 acres). The Building 80 Laboratories were constructed in 1918 and 1919 and were used as smoke laboratories through at least 1944. Activities at these laboratories would have been similar to latter day pyrotechnic R&D work.

Arsenic concentrations (21.1 mg/kg) in site soils exceed industrial RBCs and background ranges. While no agent degradation byproducts were found in site soils, nitrobenzene (5.79 mg/kg) was detected in the surface soil in an area of stressed vegetation onsite.

A geophysical survey was conducted in FY04 as part of RI activities. Phase III RI subsurface soil sampling was conducted in 2004/2005.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS OF CONCERN:
VOCs, Arsenic, Nitrobenzene

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200310	200809

RC DATE: 200809

The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC is in draft form. The RI Report addressing this site is also available as a draft.

CLEANUP STRATEGY

Groundwater at this site is being evaluated under EACC4A-B. Although the risk assessments for this site are not complete, preliminary evaluations of the existing data indicate that remedial action is unwarranted. [If unacceptable levels of risk to human health and/or the environment are identified in the draft HHRA or ERA-DERC, soil excavations and off-site disposal may be required.] However, LUCs may be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use at this site. No other actions are planned at this time. The ROD for this site is anticipated in FY08.

Building E5185 WWII Mustard Filling Plant - Cluster 1G EACC1G-A

SITE DESCRIPTION

The Building E5185 WWII Mustard Filling Plant is located south of Magnolia Road between 34th Street and Hoadley Road. Building E5185 was originally constructed as a WWII Mustard Plant, but was used for a variety of purposes from 1945 until the mid 1960s, including supply handling and warehousing, production and packing of filters and masks and equipment cleaning and layaway. Until 1975, Building E5185 was also an active shop and fabrication facility. In recent years, the Ordnance School has used Building E5185 as a vehicle maintenance training facility.

Five sediment samples taken during the RI sampling exceeded sediment screening levels and background ranges for pesticides (maximum detection – 4,4'-DDE at 330 mg/kg). Two 20,000 gallon tanks suspected beneath Bldg. E5185 were found to be no longer present and sand within the vault was deemed to be environmentally safe.

Phase III RI sampling was conducted in 2004/2005.

The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC is in draft form. The RI Report addressing this site is also available as a draft.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS: Pesticides, VOCs

MEDIA OF CONCERN: Groundwater, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200104	200809

RC DATE: 200809

CLEANUP STRATEGY

Groundwater for this site is being evaluated under EACC4A-B. Although the risk assessments for this site are not complete, preliminary evaluations of the existing data indicate that remedial action is unwarranted. [If unacceptable levels of risk to human health and/or the environment are identified in the draft HHRA or ERA-DERC, soil excavations and off-site disposal may be required.] However, LUCs may be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use at this site. No other actions are planned at this time. The ROD for this site is anticipated in FY08.

Building E5188 White Phosphorus Filling Plant - Cluster 1G EACC1G-B

SITE DESCRIPTION

Building E5188 is located in APG-EA, south of Magnolia Road between 32nd and 34th Streets. The wastewater from E5188 drained into the chemical sewer, which discharged into the wastewater ponds (Phossy Pond) located southwest of the building. A wastewater sump was located at the west end of the building, and a sump used to trap white phosphorus (WP) and plasticized white phosphorus (PWP) was located along the north wall of the building.

Building E5188 was constructed in 1940 and was used for filling munitions with Sulfur trioxide/chlorosulfonic acid (FS, a smoke mixture), CNB, and CNS (riot agents). After World War II, the building was used for filling WP and PWP munitions for the Korean and Vietnam wars. Chemicals stored within or near the building include FS, CNB, CNS, chloroform, chloropicrin, carbon tetrachloride, benzene, xylene, and caustic.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS OF CONCERN:
Pesticides, Metals

MEDIA OF CONCERN:
Groundwater, Surface Water, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
IRA	199507	199508
RI/FS	200110	200509

RC DATE: 200509

A PWP scrubber tower was removed from an area north of the building in 1995. The WP sump located along the north wall of the building was removed at the same time.

Solid WP was present in the sump and in water collected from the sump. Only pesticides and metals (chromium, copper, and lead; zinc in surface water only) were detected above action levels in sediment and surface water collected from the site.

CLEANUP STRATEGY

This site warrants no further action for industrial land-use, based on the results of the HHRA and ERA. LUCs preventing future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use will be implemented at this site in accordance with the *ROD for 13 Select Sites in the Canal Creek Study Area* (anticipated in FY06) under an existing PBC. No other actions are planned for this site.

This site is considered Response Complete awaiting Final EPA documentation expected in FY06.

1937 Mustard Disposal Pit - Cluster 1H
EACC1H-A

SITE DESCRIPTION

The 1937 Mustard Disposal Pit is located in the APG-EA approximately 400 ft west-southwest of Building E5440 in the Mustard Plant Area. Large scale manufacturing of mustard after WWII was initiated in the Mustard Plant in 1937. The Mustard Disposal Pit was used to receive "wild run" batches of mustard. The site may have also been used for the disposal of other chemical wastes.

During Phase I RI sampling, both arsenic (5.7 mg/kg) and beryllium (1.6 mg/kg) were detected in surface soils at concentrations exceeding industrial RBCs and background ranges. No mustard has been detected at this site.

A geophysical survey was conducted as part of Phase III RI activities in FY04. In the 2004/2005 timeframe, soil borings for HHRA purposes were collected and test pits in and around the suspected disposal pit were conducted.

The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC report is currently being drafted. The RI Report addressing this site is also in-progress.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
VOCs, Metals

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200310	200804
RD	200805	200809
RA(C)	200809	200909

RC DATE : 200909

CLEANUP STRATEGY

Groundwater at this site is being evaluated under EACC4A-B. Although the risk assessments for this site are not complete, it is anticipated that the preferred alternative for this site will be soil excavation and off-site disposal. LUCs may also be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use. The ROD for this site is anticipated in FY08.

WWII Chlorine Plant - Cluster 1H
EACC1H-B

SITE DESCRIPTION

The WWII Chlorine Plant is located in the APG-EA east of the West Branch Marsh along the west side of 35th Street. Plant operations to produce chlorine and caustic soda were conducted from 1942-1944. After WWII and until 1968, the building was used as a hydrogen recovery unit and filling plant. The Chlorine Plant facilities were demolished in 1969.

During Phase I RI surface soil sampling, PAHs, metals, and pesticides were detected in concentrations exceeding both industrial RBCs and background ranges. Mercury (4.3 mg/kg) was also detected in sediment samples at levels above the respective sediment screening levels and background ranges. A CERCLA Removal Action was conducted at this site during 1995 and 1996 to remove potentially contaminated surface material. Toxicity test conducted for plants and worms failed for all end-points. Phase III RI sampling was conducted in FY05. Additional RI soil borings were collected in 2005.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
POL, Metals

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200310	200804
RD	200805	200809
RA(C)	200809	200909

RC DATE: 200909

The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC report is currently being drafted. The RI Report addressing this site is also in-progress.

CLEANUP STRATEGY

Groundwater at this site is being evaluated under EACC4A-B. Although the risk assessments for this site are not complete, it is anticipated that the preferred alternative for this site will be soil excavation and off-site disposal. LUCs may also be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use. The ROD for this site is anticipated in FY08.

Building E5483 Protective Clothing Laundry - Cluster 1H EACC1H-C

SITE DESCRIPTION

The Building E5483 Protective Clothing Laundry is located south of Williams Road and immediately north of the Mustard Disposal Pit Area. Building E5483 was constructed in 1951 on the site of a former ton container steam out facility. Uses of Building E5483 from 1951 to the 1960s are not known although the original use was reported as a degreasing facility. Protective clothing laundry equipment was installed in the late 1960s; operations ceased in 1968.

During Phase I RI surface soil sampling, benzo(b)fluoranthene (12 mg/kg) and arsenic (11.1 mg/kg) were detected at concentrations exceeding background ranges and RBCs. Chrysene (0.430 mg/kg), several metals, and pesticides were detected in sediment samples at levels exceeding screening levels and background ranges. Phase I RI activities also included an geophysical survey. XRF field screening and soil sampling was conducted in support of the ERA in 2003. Phase III RI sampling was conducted in the 2004/2005 timeframe, and included subsurface soil samples.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
VOCs, PAHs, Metals, Pesticides

MEDIA OF CONCERN:
Groundwater, Soil, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	198510	200804

RC DATE: 200804

The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC report is currently being drafted. The RI Report addressing this site is also in-progress.

CLEANUP STRATEGY

Groundwater at this site is being evaluated under EACC4A-B. Although the risk assessments for this site are not complete, preliminary evaluations of the existing data indicate that remedial action is unwarranted. [If unacceptable levels of risk to human health and/or the environment are identified in the draft HHRA or ERA-DERC, soil excavations and off-site disposal may be required.] However, LUCs may be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use at this site. No other actions are planned at this time. The ROD for this site is anticipated in FY08.

Phosgene Plant Area - Cluster 1H
EACC1H-D

SITE DESCRIPTION

The Phosgene Plant Area is located in the APG-EA between Hoadley Road and 35th Street. Prior to the start of WWII, phosgene manufacturing operations were limited to a small group of buildings located north of Hanlon Road in the Phosgene Plant Area. Most of the WWII phosgene plant buildings were demolished in the 1960s. Buildings E5317, E5327, and E5365 are the only remaining structures in the Phosgene Plant Area.

No analytes were detected at concentrations exceeding industrial RBCs or background ranges during RI sampling. Phase III RI sampling was conducted in FY05. These activities focused on collection of data to support the HHRA and determining the nature and extent of contamination near buildings E5356 and E5360.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS: VOCs

MEDIA OF CONCERN:
Soil, Groundwater

PHASES	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200112	200809

RC DATE: 200809

The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC is currently being drafted. The RI Report addressing this site is also in-progress.

CLEANUP STRATEGY

Groundwater at this site is being evaluated under EACC4A-B. Although the risk assessments for this site are not complete, preliminary evaluations of the existing data indicate that remedial action is unwarranted. [If unacceptable levels of risk to human health and/or the environment are identified in the draft HHRA or ERA-DERC, soil excavations and off-site disposal may be required.] However, LUCs may be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use at this site. No other actions are planned at this time. The ROD for this site is anticipated in FY08.

Building 103 Area Chemical Plant/Dump - Cluster 1H EACC1H-E

SITE DESCRIPTION

The Building 103 Area Chemical Plant/Dump Site is located in the APG-EA at the northwest intersection of Hoadley Road and Williams Road. Building 103 was constructed in 1918 and was demolished in the 1960s. The Building 103 Dump was located on the south side of Williams Road, north of the former US Army Technical Escort Unit Building E5422. During WWI, the Building 103 Chemical Plant was used for the production of chloropicrin and for pilot plant production of clothing impregnating materials and ethylene. The Building 103 Dump was listed on historical maps as a sandpit and was used as a dumpsite for debris, miscellaneous wastes, and possible chemicals.

A ROD for the Building 103 Area Chemical Plant/Dump Site was signed in 1995. Construction of the Building 103 Dump Cap began in 1997 and was completed in 1999. The Final Remedial Action Report, Dump Site "As Built" Drawings, and the Cap/Cover Maintenance Manual were completed in FY00. Long term monitoring and operation and maintenance at the site started in 2001.

Monitoring has shown that the groundwater plume is stable.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS OF CONCERN:
VOCs, Debris, Miscellaneous Waste

MEDIA OF CONCERN:
Soil, Groundwater

PHASES	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	198510	199509
IRA	199201	199206
RD	199401	199609
RA(C)	199705	199910
LTM	200101	203709

RC DATE: 199910

CLEANUP STRATEGY

Long-term monitoring will be continued through the next Five-Year Review (one more year). Cap maintenance (including mowing, cap inspection and repair, and reporting) will continue indefinitely.

Experimental Chemical Plant Area - Cluster 1H
EACC1H-F

SITE DESCRIPTION

The Experimental Chemical Plant Area consists of pilot plants 622 (Building E5560), 642 (Building E5485), 643 (Building E5481, E5487, E5489), 644 (E5476), E5380, and Building 648 (demolished). These buildings were used for numerous purposes including chemical agent production, clothing impregnation, adamsite air drying, and testing and laboratory activities.

A CERCLA Removal Action was conducted during 1995 and 1996 to remove potential source material dumped along the banks of Canal Creek. Two flow-through sumps were removed in 2000. Phase I RI activities included surface soil and sediment sampling, as well as geophysical surveys.

Elevated levels of arsenic (~1,600ppm) and mercury (~800ppm) were detected in surface soils behind Building E5476, in an area near a discharge pipe, during risk assessment sampling conducted in FY04. The levels detected are the highest ever detected in the Edgewood Area (based on the datasets used for ecological risk assessments). Phase III RI sampling, conducted in the 2004/2005 timeframe, included the collection of subsurface soil samples.

The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC report is currently being drafted. The RI Report addressing this site is also in-progress.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
VOCs, Metal

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
IRA	199507	199512
RI/FS	200110	200804
RD	200805	200809
RA(C)	200809	200909

RC DATE : 200909

CLEANUP STRATEGY

Groundwater at this site is being evaluated under EACC4A-B. Although the risk assessments for this site are not complete, it is anticipated that the preferred alternative for this site will be soil excavation and off-site disposal. LUCs may also be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use. The ROD for this site is anticipated in FY08.

Mustard Plant Area - Cluster 1H
EACC1H-G

SITE DESCRIPTION

The Mustard Plant Area occupies the entire south of Williams Road including several outlying structures north of Williams Road. Building E5540 of the Mustard Plant Area was used to produce mustard by high temperature process reactors during WWI. After WWI, Building E5540 was dismantled and Building E5450 was constructed as a mustard manufacturing plant. This plant produced mustard during 1949 and 1959 and was demolished in the early 1970s.

Phase I RI activities included the collection/analyses of surface and subsurface soils, and sediments. Geophysical surveys were also conducted at this time. High concentrations of arsenic (255 mg/kg) have been detected in the soils, in addition to concentrations of mustard and nerve agent degradation products in groundwater. XRF field screening and soil sampling was in support of the ERA in 2003.

One large flow-through sump was removed and a steam pit was abandoned in 2000; the remaining HMFs in this area were identified as either active or required no further action.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN:
Arsenic, Agent Deg Products

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200110	200804
RD	200805	200809
RA(C)	200809	200909

RC DATE : 200909

Phase I RI geophysical survey data was analyzed in the 2004/2005 timeframe. Phase III RI geophysical surveys were conducted in FY04, and Phase III RI soil borings were collected in the 2004/2005 timeframe.

The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC report is currently being drafted. The RI Report addressing this site is also in-progress.

CLEANUP STRATEGY

Groundwater at this site is being evaluated under EACC4A-B. Although the risk assessments for this site are not complete, it is anticipated that the preferred alternative for this site will be soil excavation and off-site disposal. LUCs may also be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use. The ROD for this site is anticipated in FY08.

Building 106/107 Area – Cluster 1I
EACC1I-A

SITE DESCRIPTION

The Bldg. 106/107 Area is located in the APG-EA west of Hoadley Rd., between Feming and Hanlon Rds. Buildings. 106 and 107 were constructed around the end of WWI. The buildings were used as a booster station for pumping water from the Bush River into the plants area. Bldg. 106 was also used for ship hull paint storage, hay storage, and rabbit holding. Both buildings were demolished during the 1950s.

During Phase I RI sampling, elevated concentrations of SVOCs, PAHs, arsenic, and the presence of the explosive PETN were all detected. Phase III RI sampling was conducted in FY05.

The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC report is currently being drafted. The RI Report addressing this site is also in-progress.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS: VOCs, SVOCs, PAHs, Metal, Explosives

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200110	200804
RA	200805	200809
RA(C)	200809	200909

RC DATE : 200909

CLEANUP STRATEGY

Groundwater at this site is being evaluated under EACC4A-B. Although the risk assessments for this site are not complete, it is anticipated that the preferred alternative for this site will be soil excavation and off-site disposal. LUCs may also be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use. The ROD for this site is anticipated in FY08.

Building 113 Gas Instruction Chamber - Cluster 1I
EACC1I-B

SITE DESCRIPTION

The Building 113 Gas Instruction Chamber is located in the APG-EA west of Hoadley Road, between Fleming and Hanlon Roads. Building 113 was constructed during WWI as a gas instruction school. The most commonly used training gasses at the chamber were probably tear gasses, including CN. It is possible that the gas instruction school used bromobenzylcyanide, radioactive chemicals, and small quantities of lethal agents such as mustard, phosgene, and chloropicrin. Use of the facility as a gas chamber continued until the mid-1930s. The facility was demolished in the early 1960s.

Elevated concentrations of PAHs and arsenic have been detected in site soils. Phase III RI sampling occurred at the site in the 2004/2005 timeframe.

The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC report is currently being drafted. The RI Report addressing this site is also in-progress.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
PAHs, Metals, VOCs

MEDIA OF CONCERN:
Groundwater, Soil

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200110	200804

RC DATE : 200804

CLEANUP STRATEGY

Groundwater at this site is being evaluated under EACC4A-B. Although the risk assessments for this site are not complete, preliminary evaluations of the existing data indicate that remedial action is unwarranted. [If unacceptable levels of risk to human health and/or the environment are identified in the draft HHRA or ERA-DERC, soil excavations and off-site disposal may be required.] However, LUCs may be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use at this site. No other actions are planned at this time. The ROD for this site is anticipated in FY08.

Laboratory Toxic Waste Disposal Pits – Bldg 30 – Cluster 1J EACC1J

SITE DESCRIPTION

The Laboratory Toxic Waste Disposal Pits are located north of Fleming Road, between Hoadley Road and 32nd Street. The area is divided into three disposal pit operations associated with the laboratories at Building 30. Disposal of laboratory wastes at the Building 30 pits was performed during the WWI era until at least the 1940s.

During Phase I RI soil sampling, arsenic (13.6 mg/kg) was detected at concentrations exceeding both industrial RBCs and background ranges. A geophysical survey was conducted in FY04. Phase IIIRI soil borings for HHRA purposes were collected in FY05. Test pits were sampled in the winter of 2005.

Historical records suggest the existence of laboratory disposal pits (associated with the former Building 30 Laboratories); however, geophysical surveys did not detect pits or subsurface debris. Shallow test digs contained ash, slag, glass, concrete, and clay fragments; however, chemical concentrations in soil from the test digs did not exceed screening criteria.

The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC report is currently being drafted. The RI Report addressing this site is also in-progress.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS OF CONCERN: POL

MEDIA OF CONCERN: Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200110	200809

RC DATE: 200809

CLEANUP STRATEGY

Groundwater at this site is being evaluated under EACC4A-B. Although the risk assessments for this site are not complete, preliminary evaluations of the existing surface and subsurface soil data indicate that remedial action is unwarranted. [If unacceptable levels of risk to human health and/or the environment are identified in the draft HHRA or ERA-DERC, soil excavations and off-site disposal may be required.] However, LUCs may be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use at this site. No other actions are planned at this time. The ROD for this site is anticipated in FY08.

Canal Creek Marsh and Landfill - Cluster 1K
EACC1K

SITE DESCRIPTION

The Canal Creek Marsh and Landfill is located throughout the APG-EA Canal Creek Area, but this DSERTS site consists of the western portion of the Canal Creek Marsh. The Canal Creek Marsh was used as a receptor for liquid and solid wastes from 1917 until recent decades. Liquid wastes were generally discharged from chemical sewer outfalls. Chemicals produced in the plants near the West Branch of Canal Creek include chlorine, CN, clothing-impregnating material, arsenicals, nerve agents, mustard, and organic solvents. Solid wastes were generally disposed along the edges of the East Branch marshes and consisted largely of concrete and steel construction debris, discarded process equipment, and miscellaneous items.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN: VOCS, SVOCS, Pesticides, Herbicides, PCBs, White Phosphorus

MEDIA OF CONCERN: Soil, Groundwater, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200410	200709

RC DATE: 200709

During Phase I RI sampling, numerous analytes, including VOCs, SVOCs, pesticides/herbicides, and PCBs were detected in sediment samples at concentrations that exceed background ranges and sediment screening levels. Two white phosphorous detections (0.298 mg/kg), which may be residual material from activities in the Phossy Water Ponds, were also detected in sediment samples from the site.

Geophysical surveys were conducted in FY04. Additional Phase III RI sampling was conducted in 2004/2005. ERA data gaps have been identified by the EPA/BTAG, which APG will address in upcoming risk assessment and RI documents. Funding for additional sampling and HHRA/ERA activities was provided in previous years.

CLEANUP STRATEGY

Based on a preliminary screening of the data collected in 2004/2005, no action is planned at this time for EACC1K. However, if unacceptable risks to human heath or ecological receptors are identified in the HHRA or ERA – DERC (anticipated in FY06), remedial actions may be required. If needed, these actions in the marsh would be accomplished in conjunction with remediation of the Canal Creek Sediments under site EACC5A.

Building 503 Smoke Pot Plant - Cluster 1L
EACC1L-B

SITE DESCRIPTION

The Building 503 Smoke Pot Plant (Building E5265) is located in the APG-EA northeast of the intersection of Hoadley and Nobel Roads. Building E5265 was constructed during WWI to house a filling plant for large caliber shells. The plant was remodeled as a smoke filling plant in the later part of 1942. Since WWII, Building E5265 has been used as an R&D facility for loading pyrotechnic smoke mixtures, including the pilot scale production of colored smoke.

In 1997, one 250-gallon vessel associated with Bldg. E5265 was removed by APG DPW during a system upgrade. In 2000, four 2,000-gallon underground vessels and connecting lines associated with Bldg. E5282 were removed.

Phase I RI activities included collection of subsurface soil and sediment samples. In the 1998/1999 timeframe, 34 surface soil samples were taken in support human health risk assessments. In 2003, XRF screening and soil samples were collected in support of the ERA. Toxicity tests for worms showed survival and growth effects. Phase III RI sampling conducted in the 2004/2005 timeframe included subsurface soil sampling.

The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC report is currently being drafted. The RI Report addressing this site is also in-progress.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
PAH, Metals, VOC

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	198510	200804
RD	200805	200809
RA(C)	200809	200909

RC DATE : 200909

CLEANUP STRATEGY

Groundwater at this site straddles the Canal Creek Aquifer (CCA) groundwater divide, thus being evaluated under EACC4A-B and/or is being addressed via the existing CCA groundwater treatment system (EACC4A). Although the risk assessments have not been completed, it is anticipated that the preferred alternative for this site will be soil excavation and off-site disposal. LUCs may also be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use at this site. The ROD is anticipated in FY08.

Old Hospital and Administrative Area - Cluster 2A
EACC2A

SITE DESCRIPTION

The Old Hospital and Administration Area is located in the northern portion of the Installation, west of Wise Road (close to the installation boundary). Structures at the Old Hospital and Administration Area were built during WWI and pre-WWII eras. The area was serviced by two storm sewers and a sanitary sewer system.

During RI sampling, pesticides and mercury were detected in sediments above screening levels and background ranges. Endrin and copper were detected in the surface water at concentrations exceeding AWQC and background ranges. Nerve agent degradation byproducts were also detected in a surface water sample at the Old Hospital and Administration Area (MPA at 86.2mg/L, IMPA at 41.6mg/L).

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
VOCs, Pesticides, Metals, Nerve Agent Deg. Products

MEDIA OF CONCERN:
Groundwater, Surface Water, Sediments, Soil

PHASES	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200209	200509

RC DATE: 200509

CLEANUP STRATEGY

Land-use controls (LUCs) preventing future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use will be implemented at this site in accordance with the *Record of Decision for 13 Select Sites in the Canal Creek Study Area* (anticipated in FY06) under an existing Performance-Based Contract (PBC). No other actions are planned for this site.

This site is considered Response Complete awaiting Final EPA documentation expected in FY06.

Building E5023 WWI White Phosphorus Filling Plant - Cluster 2B EACC2B

SITE DESCRIPTION

Building E5023 WWI White Phosphorous (WP) Filling Plant site is located in the area southwest of the intersection of Wise Road and Magnolia Road. Shells and grenades were filled at this site during WWI. Immediately following WWI, the facility was used for production to fill emergency WP orders. The use of Building E5023 for WP filling continued through WWII. The filling plant was rendered inactive during the 1960s and demolished.

During RI sampling, benzo(a)pyrene (2.0 mg/kg), arsenic (10.6 mg/kg), and beryllium (2.8 mg/kg) were detected in the surface soil at concentrations exceeding industrial RBCs and background ranges. Metals and pesticides were also detected in sediments at concentrations exceeding screening criteria and background ranges. White phosphorus (0.0024 mg/kg) was also detected in site sediments.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
VOCs, PAHs, Metals, Pesticides, White Phosphorous

MEDIA OF CONCERN:
Groundwater, Soil, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	198510	200509

RC DATE: 200509

CLEANUP STRATEGY

This site warrants no further action for industrial land-use, based on the results of the HHRA and ERA. LUCs preventing future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use will be implemented at this site in accordance with the *ROD for 13 Select Sites in the Canal Creek Study Area* (anticipated in FY06) under an existing PBC. No other actions are planned for this site.

This site is considered Response Complete awaiting Final EPA documentation expected in FY06.

Building E5238 Clothing Impregnation Facility – Cluster 2C EACC2C

SITE DESCRIPTION

The Building E5238 Clothing Impregnating Facility is located in the APG-EA west of the intersection of Fleming Road and 4th Street. Building E5238 was constructed in 1941 as a clothing impregnation facility and was operated during most of 1942. A 1,1,2,2-tetrachlorethane solvent process was used for the majority of impregnation activities. Protective clothing laundering was also performed in Building E5238. Elevated metal concentrations have been detected in site soils. Groundwater samples have indicated the presence of chlorinated VOCs at low concentrations.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
VOCs, Metals

MEDIA OF CONCERN:
Groundwater, Soil

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	198510	200509

RC DATE: 200509

CLEANUP STRATEGY

Land-use controls (LUCs) preventing future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use will be implemented at this site in accordance with the *Record of Decision for 13 Select Sites in the Canal Creek Study Area* (anticipated in FY06) under an existing Performance-Based Contract (PBC). No other actions are planned for this site.

This site is considered Response Complete awaiting Final EPA documentation expected in FY06.

Laboratory Toxic Waste Disposal Pits - Cluster 2D
EACC2D

SITE DESCRIPTION

The Laboratory Toxic Waste Disposal Pits are associated with laboratories at Former Buildings 30 and E5183 in the APG-EA. The primary wastes disposed in the pits would have included mustard, nitrogen mustards, lewisite, and chloropicrin. Contaminated items such as laboratory glassware, equipment, packaging materials, protective equipment, and laboratory benches may have also been disposed in the pits.

Phase I RI activities included subsurface soil and sediment sampling. Five surface soil samples were collected in 2003 in support of the ERA. Elevated metal concentrations have been detected in the surface soil, and chlorinated VOCs and SVOCs have been detected in subsurface soils. Pesticides and metals have been detected in site sediments at concentrations that exceeded screening levels.

A geophysical survey was conducted in FY04. Phase III soil borings and test pits were conducted in 2004/2005.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN:
VOCs, SVOCs, Metals, Pesticide

MEDIA OF CONCERN:
Soil, Groundwater, Sediments

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200310	200804
RA	200805	200809
RA(C)	200809	200909

RC DATE : 200909

The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC report is in draft form. The RI Report addressing this site is also available as a draft.

CLEANUP STRATEGY

Groundwater at this site is being evaluated under EACC4A-B. Although the risk assessments have not been completed, it is anticipated that the preferred alternative for this site will be soil excavation and off-site disposal. LUCs may also be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use. The ROD is anticipated in FY08.

Noble Road Incinerators - Cluster 2E
EACC2E

SITE DESCRIPTION

The Noble Road Incinerators are located in Buildings E5292 and E5294 in the APG-EA on the south side of Noble Road. Cluster 2E also includes the Canal Creek Marsh and Landfill (East). The Building E5292 incinerator was constructed in 1918 and the Building E5294 incinerator was constructed in the early 1940s. Both incinerators were used to burn a variety of wastes including animal carcasses, classified documents, mustard distillation residues, and general sanitary wastes. Waste ashes from the facilities were deposited in a landfill along the East Branch immediately south of the site. Incineration operations were halted in the 1950s or 1960s.

Phase I RI activities included geophysical surveys and collection/analyses of soil gas, sediment, surface water, surface soil, and incinerator ash samples. Arsenic was detected in soil (26.9 mg/kg) and ash (32.5 mg/kg) samples at concentrations exceeding the carcinogenic industrial RBCs and background ranges. Toxicity tests indicated no effects for plants, but growth effects for worms. XRF screening and soil sampling was conducted in 2003 in support of the ERA. Phase III RI subsurface soil samples were collected in the 2004/2005 timeframe.

The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC report is currently being drafted. The RI Report addressing this site is also in-progress.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS OF CONCERN:
POL, Metals

MEDIA OF CONCERN:
Soil

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	198510	200804
RD	200805	200809
RA(C)	200809	200909

RC DATE : 200909

CLEANUP STRATEGY

Groundwater at this site is being addressed via the existing Canal Creek Aquifer Groundwater Treatment System (EACC4A). Although the risk assessments have not been completed, it is anticipated that the preferred alternative for this site will be soil excavation and off-site disposal. LUCs may also be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use. The ROD for this site is anticipated in FY08.

Building 99 (E5032) Experimental Filling Plant - Cluster 2F EACC2F

SITE DESCRIPTION

The Building 99 (E5032) Experimental Filling Plant is located northwest of the intersection of Hoadley and Magnolia Roads. Building 99 was constructed during WWI for use as an incendiary bomb filling plant. During WWII, the building was used as a pilot plant for development of a dry WP filling process. Other filling operations conducted at the plant have involved mustard, triethyl aluminum, WP-mustard mixture (HP) filling, GA filling, and thickening of mustard with methylmethacrylate polymer. Filling operations at Building 99 were stopped in 1981 and the building was demolished in 1998. Historical records had indicated the potential presence of 8 sumps, one tank/vault, and one possible UST at this site.

High concentrations of VOCs have been found in the Canal Creek Aquifer in and around the area of the former Building 99. The contaminated groundwater at this site currently is being evaluated as part of the West Canal Creek Area, Canal Creek Aquifer (EACC4A-B) RI/FS. Elevated levels of arsenic in soils are present north of the Bldg. 99 foundation, and the completed ERA suggests potential risks to some ecological receptors at the site. The site HHRA and RI/FS are also complete. This site poses no unacceptable risks to human health under an industrial land-use scenario; however, there is a potential for unacceptable risks to hypothetical future residents.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN:
POL

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199912	200609
RD	200505	200612
RA(C)	200505	200909

RC DATE: 200909

CLEANUP STRATEGY

Uncertainties exist with regard to the actual presence of ecological risks at this site; however, a definitive determination of risk would require more extensive and expensive studies. In order to complete a streamlined response at this site, the Army and regulators have agreed upon soil excavation and off-site disposal as the preferred alternative for this site. LUCs preventing future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use will also be implemented in accordance with the ROD for 13 Select Sites (anticipated in FY06).

Building E5103 Photographic Laboratory - Cluster 2G EACC2G

SITE DESCRIPTION

The Building E5103 Photographic Laboratory is located in the southwest corner of Wise Road and Bond Road. The Photographic Laboratory was constructed in 1965 to replace the photo and duplicating facility in the Old Hospital and Administration Area. Activities at Building E5103 include a communications center and a photographic laboratory. Wastes produced at Building E5103 are typical of photographic laboratories. Wastewater containing spent photographic chemicals is discharged through the sanitary sewer to the wastewater treatment plant.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN: VOCs

MEDIA OF CONCERN: Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	198510	200509

RC DATE: 200509

CLEANUP STRATEGY

This site warrants no further action for industrial land-use, based on the results of the HHRA and ERA. LUCs preventing future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use will be implemented at this site in accordance with the *ROD for 13 Select Sites in the Canal Creek Study Area* (anticipated in FY06) under an existing PBC. No other actions are planned for this site.

This site is considered Response Complete awaiting Final EPA documentation expected in FY06.

Building 501 Filling Plant/ E5100 Lab- Cluster 2H
EACC2H-A

SITE DESCRIPTION

The Building 501 Filling Plant and E5100 Laboratory are located between Fleming Road and the East Branch Canal Creek, near the southeast intersection of Fleming and Webster Roads. The Building 501 Filling Plant was constructed during WWI and used as a chemical munitions filling plant until 1942. The plant was converted during WWII to fill WP rounds. The filling plant and WP tanks were demolished in the 1960s. The Building E5100 Laboratory was constructed in the late 1960s at the 501 Filling Plant site, and is used for the product assurance testing of chemical agents. Wastes produced from Building E5100 include agent decontamination solutions and materials potentially contaminated with agent, including charcoal filter material from air filtering systems.

SVOCs, pesticides, and metals have been detected in site sediments in concentrations that exceed screening levels and background ranges.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS OF CONCERN:
VOCs, SVOCs, Pesticides, Metals

MEDIA OF CONCERN:
Groundwater, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	198510	200509

RC DATE: 200509

CLEANUP STRATEGY

This site warrants no further action for industrial land-use, based on the results of the HHRA and ERA. LUCs preventing future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use will be implemented at this site in accordance with the *ROD for 13 Select Sites in the Canal Creek Study Area* (anticipated in FY06) under an existing PBC. No other actions are planned for this site.

This site is considered Response Complete awaiting Final EPA documentation expected in FY06.

WWI Shell Dumps - Cluster 2H
EACC2H-B

SITE DESCRIPTION

The WWI Shell Dumps are located in an area bounded by Hoadley Road, Blackhawk Road, 4th Street, and Webster Road. Buildings E5158, E5165 and E5179 were constructed in the WWI era or used as storage dumps for empty and filled chemical shells. Occasional leak testing of filled materials was performed by placing rounds in a rack, turning the rounds upside down and observing for leakage. Shells and other materials were stored in these buildings during the 1920s and 1930s, including paints and degreasing compounds. Igniters, smoke pots, tear pots, CN and CN/DM grenades, and 5-inch Navy shells were assembled, painted and packed in the shell dump buildings during WWII. Offices, warehouses, and small maintenance activities have occupied the buildings since WWII.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS OF CONCERN:
UXO, RDX

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200110	200804
RD	200805	200809
RA(C)	200809	200909

RC DATE : 200909

During Phase I RI sampling, numerous PAHs and arsenic were detected in site soils at concentrations exceeding industrial RBCs and background ranges. Phase III RI subsurface soil sampling (i.e., soil borings) was conducted in FY05.

The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC report is currently being drafted. The RI Report addressing this site is also in-progress.

CLEANUP STRATEGY

Groundwater at this site is being addressed via the existing Canal Creek Aquifer Groundwater Treatment System (EACC4A). Although the risk assessments for this site are not complete, it is anticipated that the preferred alternative for this site will be soil excavation and off-site disposal. LUCs may also be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use. The ROD for this site is anticipated in FY08.

Filling Plant #1 & 2 - Cluster 2H
EACC2H-C

SITE DESCRIPTION

The Filling Plants Numbers 1 and 2 are located east of Hoadley Road, from the WWI Shell Dumps (EACC2H-B) to Noble Road. Filling Plants Numbers 1 and 2 were used briefly during WWI for filling munitions with chemical agents. Wastewater from the filling plant operations was discharged through chemical sewer lines to the East Branch. Filling Plant No. 2 was demolished in the early 1930s; Filling Plant No. 1 was demolished some time between 1938 and 1941. Portions of foundations and ventilation shafts from the former filling plants and air scrubber towers can still be seen in the area.

Phase I RI activities included the collection/analyses of subsurface soil, groundwater, and sediment samples. The soil borings detected chlorinated organic compounds in the 0 – 5-foot soil depth. Groundwater samples also indicated the presence of chlorinated VOCs. Recent ERA sampling revealed high hits of DDT/DDE in surface soil, however, the hits were not high when compared to APG as a whole. Phase III RI activities included FY04 geophysical surveys and subsurface soil sampling (via soil borings) in the 2004/2005 timeframe.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
Metals, Solvents

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200310	200804
RD	200805	200809
RA(C)	200809	200909

RC DATE : 200909

The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC report is currently being drafted. The RI Report addressing this site is also in-progress.

CLEANUP STRATEGY

Groundwater at this site is being addressed via the existing Canal Creek Aquifer Groundwater Treatment System (EACC4A). Although the risk assessments for this site are not complete, it is anticipated that the preferred alternative for this site will be soil excavation and off-site disposal. LUCs may also be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use. The ROD for this site is anticipated in FY08.

Airfield Area (Wiede Field) - Cluster 2I
EACC2I-A

SITE DESCRIPTION

The Airfield Area is located in the APG-EA along the east side of Wise Road. The Airfield has been operated since shortly after WWI. The original turf runway and taxiways were regraded, lengthened, and paved sometime between 1938 and 1940. Aircraft maintenance and storage hangers, a fuel pump house and additional fueling facilities, and additional storage buildings are located in the area. The National Guard is the current tenant of Weide Field.

Benzo(a)pyrene and arsenic have been detected in site surface soils at concentrations that exceed industrial RBCs and background ranges.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS OF CONCERN:
PAHs, Metals, VOCs

MEDIA OF CONCERN:
Groundwater, Soil

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	198510	200509

RC DATE: 200509

CLEANUP STRATEGY

This site warrants no further action for industrial land-use, based on the results of the HHRA and ERA. LUCs preventing future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use will be implemented at this site in accordance with the *ROD for 13 Select Sites in the Canal Creek Study Area* (anticipated in FY06) under an existing PBC. No other actions are planned for this site.

This site is considered Response Complete awaiting Final EPA documentation expected in FY06.

Old Shop and Motorpool Area - Cluster 2I
EACC2I-B

SITE DESCRIPTION

The Old Shop and Motorpool Area is located at the northwest end of Weide Field on both sides of Wise Road. Facilities in the area have included a locomotive maintenance shop, metal working shops, a painting shed, a motorpool, a service station and a dye shop. Some of these buildings were demolished during the 1960s and 1970s.

PCBs have been detected in the subsurface soil at concentrations less than 10 ppb. PAHs and pesticide concentrations in site sediments exceed screening levels and background ranges. White phosphorus (0.065 mg/kg) has also been detected from sediment samples taken onsite.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
PAHs, Pesticides, White Phosphorus

MEDIA OF CONCERN:
Groundwater, Soil

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	198510	200509

RC DATE: 200509

CLEANUP STRATEGY

This site warrants no further action for industrial land-use, based on the results of the HHRA and ERA. LUCs preventing future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use will be implemented at this site in accordance with the *ROD for 13 Select Sites in the Canal Creek Study Area* (anticipated in FY06) under an existing PBC. No other actions are planned for this site.

This site is considered Response Complete awaiting Final EPA documentation expected in FY06.

Laboratory Toxic Waste Disposal Pits - Bldg E3330 - Cluster 3A EACC3A

SITE DESCRIPTION

The Laboratory Toxic Waste Disposal Pits consist of three pits located on the eastern side of Building E3330 north of Beach Point Road. Disposal of laboratory wastes at the Building E3330 pits was performed from approximately 1943 until the late 1940s. The primary wastes disposed in the pits would have included mustard, nitrogen mustards, lewisite and chloropicrin. Contaminated items such as laboratory glassware, equipment, packaging materials, protective equipment, and laboratory benches may have also been disposed of in the pits. The extent of chemical agent munitions disposal in these pits is unknown.

Phase I RI activities included a geophysical survey, soil borings and one groundwater sample. Four surface soil samples were collected in support of the ERA in 2003. Arochlor-1248, mercury and arsenic have been detected in site soils at concentrations exceeding industrial RBCs and background ranges. Low concentrations of lorinated VOCs have also been detected in the groundwater. Phase III RI sampling of numerous media was conducted in the 2004/2005 timeframe.

The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC report is currently being drafted. The RI Report addressing this site is also in-progress.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
POL, Solvents

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200310	200804
RD	200805	200809
RA(C)	200809	200909

RC DATE : 200909

CLEANUP STRATEGY

Groundwater at this site is being addressed under EACC3L. Although the risk assessments for this site are not complete, it is anticipated that the preferred alternative for this site will be soil excavation and off-site disposal. LUCs may also be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use. The ROD for this site is anticipated in FY08.

Building E2100 Laboratory - Cluster 3B
EACC3B

SITE DESCRIPTION

The Building E2100 Laboratory is located on the south side of Bush River Road, east of 6th Street. Building E2100 was constructed in 1967 for use as a combined office and laboratory facility. Most of the laboratory work consists of analysis of environmental samples. Building E2100 has been connected to the post sanitary sewer system since the laboratory was built. Hazardous waste accumulation points and 90-day hazardous waste storage sites for the laboratory are located within the building and in storage containers/facilities east of the building.

RI sampling results did not indicate a significant contamination at the site, or contamination from spillages in the area of the hazardous materials storage sheds.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN: None

MEDIA OF CONCERN: None

PHASES	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199910	200509

RC DATE: 200509

CLEANUP STRATEGY

This site warrants no further action for industrial land-use, based on the results of the HHRA and ERA. LUCs preventing future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use will be implemented at this site in accordance with the *ROD for 13 Select Sites in the Canal Creek Study Area* (anticipated in FY06) under an existing PBC. No other actions are planned for this site.

This site is considered Response Complete awaiting Final EPA documentation expected in FY06.

Building E32XX/E3100/3081 Medical Research Labs - Cluster 3C EACC3C

SITE DESCRIPTION

The E32XX buildings are located along the east side of Ricketts Point Rd., between the family housing area and Bldg. E3330. These buildings were constructed during WWII over the former Ft. Hoyle Training site. Bldg. E3100 was built in the 1960s as a medical research laboratory, and Building E3081 was constructed in 1979.

Phase I RI activities included geophysical surveys and surface soil, sediment and surface water sampling/analyses. RI sediment sampling results indicate potentially significant PAH, pesticides, and metals concentrations. Additional sediment and surface soil samples were taken in support of the ERA in 2003.

A 2,000 gal. steel holding tank (HMF 91541) located on the east side of Bldg. E3222 was closed in 1989 and removed in 2000.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS: POL, Solvents

MEDIA OF CONCERN:
Soil, Groundwater

PHASES	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200310	200804
RD	200805	200809
RA(C)	200809	200909

RC DATE : 200909

Phase III RI activities included soil borings and groundwater DPT samples. The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC report is currently being drafted. The RI Report addressing this site is also in-progress.

CLEANUP STRATEGY

Groundwater at this site is being addressed via the existing Canal Creek Aquifer Groundwater Treatment System (EACC4A). Although the risk assessments for this site are not complete, it is anticipated that the preferred alternative for this site will be soil excavation and off-site disposal. LUCs may also be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use. The ROD for this site is anticipated in FY08.

Building E3160 Complex - Cluster 3D
EACC3D

SITE DESCRIPTION

The Building E3160 Complex is located east of Building E3100 at the end of North Kings Creek Road. Structures in this complex were built during WWI. Building E3160 was originally used as a medical research physics laboratory primarily for wound assessment. A variety of research has been performed in other complex facilities including fuel mixing and toxic laboratory work, incendiary research, and animal studies. Current activity at the site is low; smaller structures are either abandoned or used for storage.

Pesticides and metals have been detected in site sediments at concentrations exceeding screening levels and background ranges. Phase III RI sampling for sediments, subsurface soils, and surface water was conducted in the 2004/2005 timeframe.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS: VOCs, Pesticides, Metals

MEDIA OF CONCERN: Groundwater, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
IRA	199202	199203
RI/FS	200310	200809

RC DATE: 200809

The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC report is currently being drafted. The RI Report addressing this site is also in-progress.

CLEANUP STRATEGY

Although the risk assessments for this site are not complete, preliminary evaluations of the existing data indicate that remedial action is unwarranted. [If unacceptable levels of risk to human health and/or the environment are identified in the draft HHRA or ERA-DERC, soil excavations and off-site disposal may be required.] However, LUCs may be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use at this site. No other actions are planned at this time. The ROD for this site is anticipated in FY08.

Building E3300/E3330 Laboratory Complex - Cluster 3E EACC3E

SITE DESCRIPTION

The Building E3300/E3330 Laboratory Complex is located along the east side of Ricketts Point Road north of Beach Point Road. Original facilities at the site were constructed during 1941 and 1942. The last of the structures was built in the mid-1960s. Building E3300 was built in 1965 and was referred to as the "super toxic laboratory." The complex was built for R&D work related to chemical warfare. Activities at the complex have involved the use of toxic chemical agents, agent detection chemicals, decontamination chemicals, explosive compounds, pyrotechnic mixes and obscurant smokes.

DDT and its byproducts were detected at levels that exceeded sediment screening levels onsite during RI sampling. Chlorinated VOCs were also detected in surface water samples.

In 2000, the 285-gallon wastewater tank immediately adjacent to E3348 was removed.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS OF CONCERN:
Pesticides

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200310	200809

RC DATE: 200809

Phase III RI sampling was conducted in 2004 and 2005. The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC report is currently being drafted. The RI Report addressing this site is also in-progress.

CLEANUP STRATEGY

Groundwater at this site is being evaluated under EACC3L.Although the risk assessments for this site are not complete, preliminary evaluations of the existing data indicate that remedial action is unwarranted. [If unacceptable levels of risk to human health and/or the environment are identified in the draft HHRA or ERA-DERC, soil excavations and off-site disposal may be required.] However, LUCs may be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use at this site. No other actions are planned at this time. The ROD for this site is anticipated in FY08.

Building E35XX Area – Cluster 3F
EACC3F

SITE DESCRIPTION

This site is located southeast of the intersection of Ricketts Point Rd. and Beach Point Rd. Many of the buildings in this area were constructed during WWII and used as small laboratories and test/surveillance chambers.

Phase I RI sampling indicated possible chlorinated VOC contamination in subsurface soils at the site (i.e., via soil gas surveys). In order to mitigate possible data gaps in this area, Phase III RI sampling of subsurface soils (soil borings) and groundwater via DPT was conducted in the 2004/2005 timeframe.

The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC report is currently being drafted. The RI Report addressing this site is also in-progress.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS OF CONCERN:
Chlorinated VOC

MEDIA OF CONCERN:
Soil

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200310	200804

RC DATE: 200804

CLEANUP STRATEGY

Groundwater at this site is being evaluated under EACC3L. Although the risk assessments for this site are not complete, preliminary evaluations of the existing data indicate that remedial action is unwarranted. [If unacceptable levels of risk to human health and/or the environment are identified in the draft HHRA or ERA-DERC, soil excavations and off-site disposal may be required.] However, LUCs may be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use at this site. No other actions are planned at this time. The ROD for this site is anticipated in FY08.

Building E360X/E361X/E362X Area - Cluster 3G
EACC3G

SITE DESCRIPTION

The Building E360X/E361X/E362X Area is located along the north side of Beach Point Road, east of the Building E3330 Laboratory. Structures in this area were built after WWII and have been used for offices, laboratories and material storage. There is insufficient information concerning the types of laboratory and R&D work conducted in this area; however, some of the reported laboratory work involved the use of pyrotechnic materials.

Phase I RI sampling revealed elevated arsenic concentrations in surface soils (7.3 mg/kg), and elevated metals concentrations in site sediments and surface waters. Recent ERA sampling detected metals contamination as well via XRF. During this sampling event, two deformed frogs were found at this site; it is unclear at this time whether one of the frogs was injured after birth or was genetically deformed.

A geophysical survey was conducted in FY04. Phase III RI surface soil, subsurface soil, and sediment sampling/analyses were conducted in the 2004/2005 timeframe.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS: VOCs, Metals

MEDIA OF CONCERN: Soil, Groundwater, Surface Water, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200310	200804
RD	200805	200809
RA(C)	200809	200909

RC DATE: 200909

The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC report is currently being drafted. The RI Report addressing this site is also in-progress.

CLEANUP STRATEGY

Groundwater at this site is being evaluated under EACC3L. Although the risk assessments for this site are not complete, it is anticipated that the preferred alternative for this site will be soil excavation and off-site disposal. LUCs may also be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use. The ROD for this site is anticipated in FY08.

3560 Test Chamber Complex - Cluster3H
EACC3H

SITE DESCRIPTION

The Building E3560 Test Chamber Complex is located along the south side of Beach Point Road between Building E35XX Area and Building E3570. The complex was built in 1954 as a testing facility for confined detonation of explosively configured items. Reconstruction of the original test chamber was required in 1966 after an alcohol vapor explosion destroyed the chamber. Principal chemicals used in the test chamber tests include chemical agents and solutions to decontaminate the chamber after testing.

RI soil sampling revealed the presence of toluene, PAHs, pesticides, and metal concentrations in the surface soil; however, these concentrations did not exceed industrial RBCs.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
VOCs, PAHs, Pesticides, Metals

MEDIA OF CONCERN:
Groundwater, Soil

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	198510	200509

RC DATE: 200509

CLEANUP STRATEGY

This site warrants no further action for industrial land-use, based on the results of the HHRA and ERA. LUCs preventing future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use will be implemented at this site in accordance with the *ROD for 13 Select Sites in the Canal Creek Study Area* (anticipated in FY06) under an existing PBC. No other actions are planned for this site.

This site is considered Response Complete awaiting Final EPA documentation expected in FY06.

Building E3570 Assembly Plant - Cluster 3I
EACC3I

SITE DESCRIPTION

The Building E3570 Assembly Plant is located along the south side of Beach Point Road, east of the Building E3560 Test Chamber Complex. This facility was constructed in 1953 as a munitions assembly plant. It has been used for production of bomb clusters and for vehicle contamination testing. Building E3570 has also been used as a laboratory. Machining and assembly-type work has continued at the site into recent years. No information is available concerning the type of laboratory work performed at Building E3570 or the composition of material previously stored at the drum rack.
RI sampling did not indicate significant soil contamination at the site with the exception of the detections of MPA (1.71 mg/kg) and IMPA (6.7 mg/kg) which are nerve agent degradation byproducts. Both MPA and IMPA are highly soluble and mobile.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS OF CONCERN:
Pesticides, POL, Solvents, Metals

MEDIA OF CONCERN:
Soil

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	198510	200809

RC DATE: 200809

Geophysical surveys were conducted in FY04. Additional Phase III RI sampling was conducted in FY05. The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC report is currently being drafted. The RI Report addressing this site is also in-progress.

CLEANUP STRATEGY

Groundwater at this site being addressed under EACC3L. Although the risk assessments for this site are not complete, preliminary evaluations of the existing data indicate that remedial action is unwarranted. [If unacceptable levels of risk to human health and/or the environment are identified in the draft HHRA or ERA-DERC, soil excavations and off-site disposal may be required.] However, LUCs may be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use at this site. No other actions are planned at this time. The ROD for this site is anticipated in FY08.

Building E3580 Pyrotechnic Loading Facility - Cluster 3J EACC3J

SITE DESCRIPTION

The Building E3580 Pyrotechnic Loading Facility is located southwest of the intersection of Beach Point Road and 57th Street. Most of the site structures at this facility were built in 1951 and 1952. The facility was placed into service in 1952 and has been used continuously for R&D and evaluation of pyrotechnic mixtures, loading procedures, and munitions into which the munitions are loaded. Work cubicles along both sides of the building are used for experimental pyrotechnic research and small-scale item fabrication. Pyrotechnic mixtures loaded into munitions have included irritant and incapacitating chemical agents such as CS, CN, BZ and DM. Small quantities of explosives have also been handled onsite including TNT, RDX, tetryl, and PETN. Other materials used onsite included pyrotechnic fuel materials, oxidizers, and dyes. Prior to 1986, decontamination and cubicle washout wastewater were discharged to the ground surrounding the building.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
VOCs

MEDIA OF CONCERN:
Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
IRA	199009	199209
RI/FS	198510	200804

RC DATE: 200804

RI soil sampling did not indicate any significant contamination at this site. Two CERCLA Removal Actions have previously been conducted at this site. Phase III RI sampling (groundwater and subsurface soil) was conducted in the 2004/2005 timeframe. Perchlorate has been detected in the surficial aquifer at this site at elevated levels; however, any possible groundwater remediation for this site will be addressed under the Bldg. E3640 Process Laboratory site (EACC3L).

The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC report is currently being drafted. The RI Report addressing this site is also in-progress.

CLEANUP STRATEGY

Perchlorate has been detected at a maximum concentration of 350 ppb in well CC-135A (south of Building E3580). Long-term monitoring activities for the surficial aquifer in the Kings Creek Industrial Area will be addressed under site EACC3L. At this time, no further action is planned for site EACC3J. However, if unacceptable risks to human health or ecological receptors are identified in the draft HHRA or ERA-DERC (anticipated in Spring 2006), remedial actions may be required in the future, which will be captured under EACC3L. The ROD for this site is anticipated in FY08.

Building E37XX Complex - Cluster 3K
EACC3K-A

SITE DESCRIPTION

The Building E37XX Complex is located north of the intersection of Beach Point Road and 57th Street. Principal structures within this complex include Building E3724, E3726, and E3728. These structures were constructed during 1942 and 1943 for use as new pilot plant facilities. Support structures, including a pilot filling tower, a pilot mixing building, and storage magazines were constructed in 1945. Building E37XX Complex facilities were used for experimental filling rather than process work. It is possible that pilot scale manufacturing of nitrogen mustard was also performed in these facilities. Experimental filling of plasticized white phosphorus was performed at the complex during WWII.

Phase I RI activities included geophysical surveys and surface soil and sediment sampling/analyses. Elevated concentrations of arsenic (16.7 mg/kg) and benzo(a)pyrene (2.4 mg/kg) have been detected in site soils. Elevated pesticide and metal concentrations were also detected in the sediments. Surface soil samples were collected in support of the ERA in 2003.

The 500-gallon underground wastewater tank located inside E3728 has been filled with flowable fill by ERDEC.

Phase III RI sampling was conducted in the 2004/2005 timeframe. Soil borings, groundwater sampling, and an additional geophysical survey were conducted. The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC report is currently being drafted. The RI Report addressing this site is also in-progress.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS OF CONCERN:
Metals, VOCs, PAHs, Pesticide

MEDIA OF CONCERN:
Soil, Groundwater, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200310	200804
RD	200805	200809
RA(C)	200809	200909

RC DATE : 200909

CLEANUP STRATEGY

Groundwater at this site is being evaluated under EACC3L. Although the risk assessments for this site are not complete, it is anticipated that the preferred alternative for this site will be soil excavation and off-site disposal. LUCs may also be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use. The ROD for this site is anticipated in FY08.

B-Field Kings Creek Dump - Cluster 3K
EACC3K-B

SITE DESCRIPTION

The B-Field Kings Creek Dump is located in the APG-EA southwest of Kings Creek and north of Building E3700. Demolition debris, chemical material, and miscellaneous junk were placed at the 8.3-acre dumpsite. The only hazardous chemical material found at the site was CS, which was contained in bags. These bags of CS were removed from the site by US TEU personnel. No visible CS residue was left at the site. No environmental sampling has been performed at the site with the exception of one groundwater sample. The well is located in the Canal Creek Aquifer and exhibited a DMMP detection of 99 ppb.

Phase III RI sampling was conducted in 2004 and 2005. The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC report is currently being drafted. The RI Report addressing this site is also in-progress.

Ash and debris (e.g., brick, concrete, and metal fragments/drums/pipe) were observed to a depth of at least five feet at the site. However, surface soil and subsurface soil samples collected in the vicinity of the waste did not contain any significant chemical contamination.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS OF CONCERN:
DMMP, CWM, Arsenic

MEDIA OF CONCERN:
Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	198510	200809

RC DATE: 200809

CLEANUP STRATEGY

At this point, no further action is anticipated. If unacceptable risks to human health or ecological receptors are identified in the draft HHRA or ERA-DERC (anticipated in FY06), remedial actions may be required in the future. LUCs may also be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use. The ROD for this site is anticipated in FY08.

Building E3640 Process Laboratory - Cluster 3L
EACC3L

SITE DESCRIPTION

The Building E3640 Process Laboratory is located in the APG-EA on the north side of Beach Point Road, northeast of Building E3570. The facility was constructed in 1951 and 1952 and was used as a process laboratory from 1952 until 1978. Most of the work at the site involved preparation of materials or evaluation of production processes. Research involving the disposal of chemical agents was also performed at Building E3640. The site is currently abandoned. Chemicals used at the site would have included essentially all of the standard US military chemical agents and post-WWII experimental agents. Other miscellaneous chemicals (such as B-1 dye), manufacturing raw materials, and intermediates of those materials, were used or stored onsite.

Sump abandonment and removal action (including removal of pipeline and 310 tons of contaminated soil) were conducted in 1995. Phase I RI activities included sampling/analyses of groundwater, surface water, surface soils and subsurface soils. Diisopropyl methylphosphonate (DIMP) has been detected in the subsurface soil and the surficial aquifer groundwater at the site. DIMP toxicity and screening-level risk assessment reports were distributed for review in 1999. These reports indicated that DIMP contamination at this site poses a negligible risk to plants and animals at the site, including aquatic resources in the tidal estuarine waters of Kings Creek. Surface soil sampling in support of the ERA was conducted in 2003. Phase III RI sampling was conducted in the 2004/2005 timeframe, and included surface soil, subsurface soil, and groundwater sampling.

The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC report is currently being drafted. The RI Report addressing this site is also in-progress.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN:
DIMP, VOCs, Metals, Perchlorate

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200310	200804
RD	200805	200809
RA(C)	200805	200809
LTM	200809	203809

RC DATE: 200809

CLEANUP STRATEGY

Contaminated surficial aquifer groundwater in the Kings Creek Industrial Area is being addressed under this site. Long-term monitoring of the groundwater will include sampling of 10 existing surficial aquifer wells for VOCs, chemical agent degradation products, metals, and perchlorate. Although the risk assessments for this site are not complete, it is anticipated that the preferred alternative for this site will also include soil excavation and off-site disposal. LUCs will be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use. The ROD for this site is anticipated in FY08.

Beach Point Test Site - Cluster 3N
EACC3N

SITE DESCRIPTION

The Beach Point Test Site is located on a small peninsula at the mouth of Kings Creek where the creek flows into Bush River. The Beach Point Test Site includes the peninsula, areas south of Beach Point, and areas northeast of the APG-EA Wastewater Treatment Plant (EACC3M-A). The southern portion of the test site has been used for a variety of military testing work, including firing tests of 4.2-inch mortar rounds (1940s) and performance tests for pyrotechnic devices and smoke generators (1945-1970). Many of the wastes generated from these tests were discharged directly into the Bush River.

A ROD for this site was finalized in 1997 that requires long-term monitoring of the site. Quarterly sampling events for the first year of long-term monitoring occurred in February, May, September, and December 1999. Sampling events included sampling and analysis of surface water and sediments in Bush River and Kings Creek. In addition, the annual groundwater-sampling event occurred in February 1999. Results do not suggest contaminant release to sediment and surface water due to discharge of the Beach Point groundwater plume. Annual sampling of surface water, sediments and groundwater started in 2000 and continues in 2006.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN:
UXO, PCBs, Metals, VOCs

MEDIA OF CONCERN:
Surface Water, Groundwater, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	198510	199709
IRA	199301	199301
LTM	199902	200709

RC DATE: 199709

CLEANUP STRATEGY

It is anticipated that annual LTM will continue through the next five-year review for the Edgewood Area in FY07, after which point the LTM may be discontinued.

B-Field Range Area – Cluster 3O
EACC3O

SITE DESCRIPTION

This site is located along a trail southeast of Building E3580 and Beach Point Rd. This site was an impact area for mortar and artillery testing from A-Field during the 1920s. It may have also been the site of GA storage during the late 1940s.

No sampling was conducted at this site during Phase I RI Canal Creek Study Area activities; however, four surface soil samples were collected for the ERA in 2003. Phase III RI sampling (subsurface soil and groundwater) was conducted at this site in the 2004/2005 timeframe, as well as two geophysical surveys.

The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC report is currently being drafted. The RI Report addressing this site is also in-progress. Any possible groundwater remediation and long-term monitoring for this site will be addressed under the Bldg. E3640 Process Laboratory site (EACC3L), since that site is considered the source of groundwater contamination in the area.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS OF CONCERN: UXO

MEDIA OF CONCERN: Soil

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200310	200804

RC DATE: 200804

CLEANUP STRATEGY

Although the risk assessments for this site are not complete, preliminary evaluations of the existing data indicate that remedial action is unwarranted. [If unacceptable levels of risk to human health and/or the environment are identified in the draft HHRA or ERA-DERC, soil excavations and off-site disposal may be required.] However, LUCs may be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use at this site. No other actions are planned at this time. The ROD for this site is anticipated in FY08.

Mosquito Test Grid Area - Cluster 3P
EACC3P

SITE DESCRIPTION

The Mosquito Test Grid Area is located in the APG-EA, southwest of Building E2100. The site was used in the late 1960s by AEHA to develop pesticides for mosquito control. Mosquitoes were raised in ponds onsite and pesticides were applied to determine lethality to mosquito larvae. The ponds were constructed with black polyethylene. Eighty-two ponds were constructed; each was ~ 4 x 5 x 1.5 ft.

Four insecticides were evaluated at the site including: Temephos, Chloropyrifos, Fenthion and Naled.

Phase III RI sampling conducted in 2004 and 2005 included surface soil, subsurface soil and sediments sampling/analyses.

The HHRA Approach document has been finalized and the assessment is underway. The screening level ERA is awaiting final approval and the DERC report is currently being drafted. The RI Report addressing this site is also in-progress.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
Pesticides, Metals

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200310	200809

RC DATE : 200809

CLEANUP STRATEGY

Although the risk assessments for this site are not complete, preliminary evaluations of the existing data indicate that remedial action is unwarranted. [If unacceptable levels of risk to human health and/or the environment are identified in the draft HHRA or ERA-DERC, soil excavations and off-site disposal may be required.] However, LUCs may be required to prevent future military family housing, elementary and secondary schools, child care facilities, playgrounds, and non-military residential land use at this site. No other actions are planned at this time. The ROD for this site is anticipated in FY08.

East Area Canal Creek Aquifer - Cluster 4A-A
EACC4A

SITE DESCRIPTION

The Canal Creek Aquifer primarily includes two contaminant plumes: the East Canal Creek Area Plume and the West Canal Creek Area Plume. The West Canal Creek Area Plume mainly includes chlorinated VOC contamination and tends to flow toward the West Branch of Canal Creek or the Gunpowder River. Additional investigation activities are presently being conducted for the West Canal Creek Area Plume; this plume is being addressed in a separate action.

The ROD, signed in July 2000, addresses the VOC contamination within the East Canal Creek Area Plume and describes initial treatment plant discharge to the surface waters and ultimately beneficial reuse. The treatment plant construction was completed in FY03. Plant operations began in FY03.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS: VOCs

MEDIA OF CONCERN: Groundwater

PHASES	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	198510	200007
RD	199905	200208
RA(C)	200202	200304
RA(O)	200304	203704

RIP DATE: 200304
RC DATE: 203704

CLEANUP STRATEGY

The East Branch Canal Creek Groundwater Treatment Plant (GWTP) began operation in April 2003. Operation and maintenance, as well as long-term monitoring of the contaminated plume, will continue indefinitely.

West Area Canal Creek Aquifer - Cluster 4A-B
EACC4A-B

SITE DESCRIPTION

Because of questions raised by the APG SCC TAG, the West Branch plume of the Canal Creek Aquifer was removed from the Canal Creek Aquifer ROD. USGS has conducted extensive natural attenuation studies at this site since 1994, revealing that the organic-rich wetland sediments are removing the VOCs from the contaminated aquifer for the most part. VOCs have been detected in the surface waters of the West Branch Canal Creek, and the Canal Creek below the confluence of the West and East Branches. Because of this finding, USGS has conducted thermal imaging surveys, and identified seeps where groundwater is bypassing the wetland sediments and discharging directly into the Creek. A USGS Bioreactive Mat Pilot Test is ongoing at a seep site on the west shore of the West Branch. A direct-injection pilot test is planned as well.

The Final RI is nearing completion and a Draft FS has been produced. A phyto-remediation study is ongoing. Discussions with regulators has indicated that due to the presence of DNAPL in this aquifer, a Technical Impracticability Waiver will be developed along with the establishment of an Alternate Remedial Strategy (most likely including the placement of bioreactive mats and/or application of direct injection of WBC2 microbial culture at specified seep locations).

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS: VOCs

MEDIA OF CONCERN:
Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	198510	200809
RD	200809	200909
IRA	200512	200807
RA(C)	200810	200909
RA(O)	200910	201410

RIP DATE: 200910
RC DATE: 201410

CLEANUP STRATEGY

It is anticipated that the ROD for this site will be completed in FY08. At this point, it is anticipated that a possible remedial action will include bioaugmentation and MNA (w/o phytoremediation), coupled with installation of bioreactive mats at seep areas throughout the West Branch of Canal Creek. In addition, ongoing O&M will be needed.

Canal Creek Bed Sediment Source Area – Cluster 5A EACC5A

SITE DESCRIPTION

Numerous surface water and sediment samples were taken along both the East Branch and West Branch of Canal Creek (~6 miles long) in support of RI and Risk Assessment activities. Fifty organic chemicals have been detected in sediment samples; 34 have been identified as contaminants of potential concern. Pesticides and Arochlor concentrations consistently exceed Toxicity Reference Values (TRVs). PAH concentrations indicate the potential for impact to benthic organisms. Mercury hot-spots are a potential concern to human health and the ecological receptors.

In FY03 and FY04, EPA ERT performed sediment sampling in the Canal Creek in support of an ecological risk assessment. EPA ERT's ERA, complete with development of preliminary remediation goals, have been finalized; however, it is not clear at this time whether this document completes the site's ERA process and documentation. EPA ERT recommends focusing remediation efforts in the stream reach from the West Branch Canal Creek at Hanlon Road to 1/2 of the way downstream toward the confluence of the East Branch/West Branch.

Upcoming CERCLA activities for this site include additional site sampling/analyses to fill in any identified site data gaps; development of a HHRA; additional ERA work and documentation (if needed); and, completion of an RI and FS.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS OF CONCERN:
Pesticides, PCBs, PAHs

MEDIA OF CONCERN:
Sediment, Surface Water

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200310	200809
RD	200810	200909
RA(C)	200910	201009

RC DATE: 201009

CLEANUP STRATEGY

Stream diversion, excavation of hot-spots, and off-site disposal are anticipated at this time. A ROD is anticipated in FY08.

Kings Creek Sediment Pesticide Source Area - Cluster 5B EACC5B

SITE DESCRIPTION

The Kings Creek Sediments Pesticide Source Area is located in the APG-EA along the western arm of Kings Creek. In 1994, sediment samples were taken throughout Kings Creek. DDD_r detections in the sediment indicated the possible presence of a pesticide source in the creek bed; however, the location of this source has not been ascertained at this time. Silver and mercury concentrations consistently exceed available Toxicity Reference Values (TRVs).

Additional sampling in support of an ecological risk assessment was conducted by the EPA Environmental Response Team in October 2005.

Upcoming CERCLA activities for this site include development of the Human Health and Ecological Risk Assessments, and completion of an RI and FS.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
Pesticide, Metals

MEDIA OF CONCERN:
Sediment, Surface Soil

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200310	200809
RD	200810	200909
RA(C)	200909	201009

RC DATE: 201009

CLEANUP STRATEGY

A ROD is anticipated in FY08. Sediment removal and habitat reconstruction are tentatively planned.

Carroll Island Study Area
EACI00

SITE DESCRIPTION

Carroll Island Study Area (CISA) is an ~ 855 acres land mass located southwest of the Edgewood Peninsula across the Gunpowder River (a tributary of the Chesapeake Bay). Carroll Island was acquired by APG in 1918, but no existing evidence indicates testing or training operations were conducted at the study area until 1944. From 1944 to 1972, Carroll Island was used as the primary open-air chemical agent test site for the Edgewood Area; chemical agent testing operations included contamination/decontamination, dispersion and persistence studies and chemical munitions tests. Prior to 1964, materials such as mustard, chlorobenzene, sarin, VX, white phosphorus, and explosives were tested. Between 1961 and 1971, testing of lethal chemical agents, incapacitating agents, and smoke/incendiary materials was conducted. Waste from testing activities was discarded via dumping or burial on the island. The CISA contains areas of CWM/UXO, which may result in a potential release of constituents to the surrounding environment and the Chesapeake Bay due to the shallow water table, flooding, and shoreline erosion.

A ROD was signed in Aug 2001, calling for land use controls and shoreline stabilization.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN:
UXO, Chemical Agents

MEDIA OF CONCERN:
Soil, Groundwater, Surface Water

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199108	199609
IRA	199308	199408
RD	200010	200206
RA(C)	200206	200409
LTM	200510	203709

RC DATE: 200409

CLEANUP STRATEGY

Land use controls and shoreline stabilization were implemented (3,500 ft) as required by the ROD and will continue indefinitely.

Graces Quarters Study Area
EAGQ00

SITE DESCRIPTION

The Graces Quarters Study Area (GQSA) is ~476 acres and is situated on a peninsula located on the west side of APG. From 1944 to 1971, chemical agent and biological simulant testing were performed. During the period of July 1964 through December 1971, VX, Tevlar, sarin, soman, EA3990, mustard, BZ, adamsite, chloroacetophenone, WP, FS, TEA, CSM, and decontaminating agents were released during testing activities. Solid waste was buried in pits at disposal areas. Specific sites pose a potential human health risk due to the presence of lead in the soils and VOCs in the groundwater. Specific sites pose a potential ecological risk due to the presence of mercury in the soils. The GQSA contains areas of CWM/UXO which may result in a potential release of constituents to the surrounding environment and the Chesapeake Bay due to the shallow water table, flooding, and shoreline erosion.

A ROD was signed in Aug 2001, calling for land use controls and shoreline stabilization.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN:
Lead, Mercury, VOCs, UXO/CWM

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199108	199908
IRA	199308	199404
RD	200110	200206
RA(C)	200206	200209
LTM	200209	203709

RC DATE: 200209

CLEANUP STRATEGY

Land use controls and shoreline stabilization (1,500 ft) were completed as required by the ROD and will continue indefinitely.

Surficial Aquifer - Cluster 2
EAGQ02-D

SITE DESCRIPTION

The surficial aquifer beneath Graces Quarters consists of fine-to-medium sand, with small amounts of fine-to-medium gravel and layers of silt and silty clay. This aquifer overlies a confining layer of silty clay. In some areas, the confining layer is absent, connecting the surficial aquifer to the underlying aquifer. The surficial aquifer contains a contaminant plume consisting primarily of VOCs up to 8,400 mg/L. The plume is migrating to the south-southwest and exceeds the EPA target risk range of 1E-06 to 1E-04 (4E-03) and the hazard index criterion of 1.0 (3) for the reasonable worst-case future land use scenario (future military multiple-land use).

The FS was finalized in Dec 2003.

A PBC contract for the RD, RA and RA(O) was awarded in Aug 2004.

The RD and RA(C) were completed in FY05.

STATUS

REGULATORY DRIVER:

RRSE: High

CONTAMINANTS OF CONCERN:
VOCs (1,1,2,2-tetrachloroethane)

MEDIA OF CONCERN:
Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199108	200409
RD	200407	200510
RA(C)	200407	200510
RA(O)	200407	203409

RIP DATE: 200510
RC DATE: 203409

CLEANUP STRATEGY

The groundwater contamination will be addressed by enhanced in-situ remediation followed by MNA until MCLs have been met. No LTM requirements. This site will be funded under PBC at APG for the first five years.

J-Field Study Area
EAJF00

SITE DESCRIPTION

J-Field was used for military purposes as early as 1917; however, the use of the site became more active between WWII and the late 1970s. Use of the site included testing of high explosives and chemical munitions, testing of conventional munitions on structures and buildings, thermal (open burning) and chemical decontamination of chemical munitions, open detonation, and disposal. Chemicals disposed of at J-Field included nerve agents, blister agents, riot control agents, white phosphorus, chlorinated solvents, and drummed chemical wastes generated by research laboratories, process laboratories, pilot plants, and machine and maintenance shops.

Final solution is Institutional Controls, phyto-remediation, monitored bioremediation processes, abandonment of confined aquifer well JF-51, , continued monitoring of the confined aquifer, and implementation of a free- phase DNAPL recovery in the localized area where DNAPL was observed, temporary Geoprobe well GP-53 (TI waiver). The ROD was signed in Sept 2001.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN:
VOCs (1,1,2,2-tetrachloroethane)

MEDIA OF CONCERN:
Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	198510	200103
IRA	199205	199912
RD	200104	200109
RA(C)	200110	200404
LTM	200404	203709

RC DATE: 200404

CLEANUP STRATEGY

LTM for the whole J-Field area is funded under this site. (Final Long-Term Monitoring/Operations and Maintenance Plan for the J-Field Study Area [Weston 2004]).

White Phosphorus Burning Pit
EAJF01

SITE DESCRIPTION

The White Phosphorus (WP) Burning Pits were used for the disposal of WP, munitions filled with WP, and materials contaminated with WP. The disposal was accomplished by detonation and burning. The WP Burning Pits consist of two main pits and three other sites – the Northwestern Suspect Burning Area, the Southwestern Suspect Burning Area, and the Suspect Storage Area. The area had been used as a disposal site since the late 1940s or very early 1950s. Low levels of copper, lead, selenium, zinc, and some SVOCs were found in surface soil at the Northwestern Suspect Burning Area; trace levels of 1,4-dithiane were detected in the groundwater adjacent to the site. Low levels of zinc and several types of SVOCs were detected in the soil at the Southwestern Suspect Burning Area. The Suspect Storage Area is not considered a source of contamination.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS: Metals, SVOCs, CWM, DEG Products

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	198510	200709
RD	200610	200709
RA(C)	200809	200909
RA(O)	200909	203706

RIP DATE: 200909
RC DATE: 203706

CLEANUP STRATEGY

An RI is underway at this site (funded in FY03). Complete a FS and a signed ROD is anticipated in FY07. Soil cover may be placed over the open pits to limit contact with contamination. Phytoremediation will possibly be used as groundwater source control. Shoreline stabilization may be needed.

Toxic Burning Pit
EAJF05

SITE DESCRIPTION

The Toxic Burning Pits were used extensively from the late 1940s through the 1960s for the disposal of chemical and blister agents by open burning. The pits were used for the demolition of high explosives by open detonation. This site includes a filled VX Burning Pit, a filled Mustard Burning Pit, a small Liquid Smoke Disposal Pit, and a Southwestern Suspect Burning Area.

Disposal in the VX Pit was concentrated in the western section, which is contaminated with moderate to high levels of heavy metals and low levels of chlorinated ethanes and ethenes, petroleum-related compounds, pesticides, dioxins and furans, 1,4-dithiane, and phthalates. UXO may also be present.

The Mustard Burning Pit was not fully characterized, due to the potential presence of UXO; surface soil near this pit contains high levels of heavy metals. CSM degradation products were detected in two subsurface soil samples.

High levels of titanium and heavy metals were detected in the soil at the Liquid Smoke Disposal Pit.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN: VOCs, Metals, Pesticides, Dioxins/Furans, Chemical Agent Deg. Products

MEDIA OF CONCERN: Soil

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	198510	199609
RD	199904	200104
RA(C)	200105	200111
LTM	200112	203112

RC DATE: 200111

The surface soil in the Southwestern Suspect Burning Area contains heavy metals.

The selected remedial alternative identified in the ROD for this site is removal of the hot spots of contamination from the soil OU, followed by construction of a protective soil blanket over this soil OU, and shoreline erosion control protection. Due to the cost prohibitive nature of the continued excavation, an ESD has been completed (specifying covering the pits with a permeable soil barrier). The PSB was constructed. No further action is needed.

CLEANUP STRATEGY

Long Term Monitoring for this site is covered under EAJF00.

Concrete Slab Dump Area 1 - Cluster 5
EALC05-C

SITE DESCRIPTION

The Concrete Slab Dump Area 1 lies immediately south of the Concrete Slab Test Area and was used as a waste disposal site from WWII until the early 1970s. During the 1970s and early 1980s, the Army conducted limited cleanup activities at the site and removed munitions items. The dump area contains a small bunker, fence posts, and several mounds of scrap metal from weapons testing activities. Mounds containing buried metallic wastes, scrap metal, and test item remnants are found from the southern edge of the concrete slab, extending ~200 ft in a southeast to northwest direction.

Field sampling activities were performed under a Focused Feasibility Study (FFS) to further define the extent of metals contamination in the soil. Elevated concentrations of metals were found in the soil, including lead (354 mg/kg) and arsenic (9.2 mg/kg). The FFS was completed in FY01.

A Decision Document was completed in Jan 03, stating that waste-contaminated soil will be removed and LTM of downgradient sediments will continue. The removal was funded in FY03 and was completed in FY05. The ROD was signed in August 2004.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN:
Metals, Buried Waste

MEDIA OF CONCERN:
Soil

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199105	200009
IRA	199411	199503
RD	200107	200207
RA(C)	200303	200409
LTM	200409	201209

RC DATE: 200409

CLEANUP STRATEGY

Continue LTM annually for approximately five years.

Any current or future action at EALC05-D will be funded under this site.

Surficial Aquifer - Cluster 9
EALC09-F

SITE DESCRIPTION

Groundwater sampling results have identified trichloroethene (60 ug/L), 1,1-dichloroethene (11 ug/L), and nickel (194 mg/L) in the surficial aquifer of the Cluster 9 Nike Missile Battery Control Area at concentrations exceeding Applicable or Relevant and Appropriate Requirements (ARARs) (i.e., maximum contaminant levels). The chlorinated solvents present in the Cluster 9 surficial aquifer groundwater are in a dissolved phase. Based on previous investigations and validated analytical results, the likely source of these VOCs is from past disposal of chlorinated solvents within the northern portion of the Nike Control Dry Wells near Buildings E6833 and E6836. DNAPLs were not detected by the interface probe used to test the surficial aquifer monitoring wells.
The Risk Assessment (FY01) concluded acceptable risk from potential future industrial use.

EPA requested (in early 2002) additional samples be taken since the contamination levels are above MCLs. Additional geoprobe sampling (in FY03) showed total VOCs up to ~500ppb. A FS has been completed.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN:
VOCs, Nickel

MEDIA OF CONCERN:
Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199105	200609
RD	200509	200709
RA(C)	200509	200809
RA(O)	200509	204009

RIP DATE: 200809
RC DATE: 204009

CLEANUP STRATEGY

Remediation of the VOC source will be addressed by a SVE system for one year and MNA for thirty years. The first five years of RA are captured under the PBC (site # PBC at APG).

Surficial Aquifer - Cluster 13
EALC13-D

SITE DESCRIPTION

Cluster 13 was the site of extensive decontamination training. Cluster 13 contains chlorinated solvent contamination (~25-acre plume) in the surficial aquifer (up to 96,000 ug/L total VOCs). The Baseline Risk Assessment for Cluster 13 calculated the total excess lifetime cancer risk associated with ingestion of the groundwater by site workers from the Cluster 13 surficial aquifer as 4×10^{-3} with a Hazard Index of 2.0. The Cluster 13 RI Report recommended plume delineation and implementation of an FFS to evaluate potential volatile organic compound-contaminated groundwater remedial alternatives. Several FFS field activities (i.e., collection of groundwater, surface water, and sediment pore water samples; installation of drive points; direct push sampling; sampling for natural attenuation parameters; and collection of groundwater elevation data) were completed in October 1998.

The field activities indicate that natural attenuation processes are very active in this area, destroying much of the contamination as the groundwater discharges into the neighboring marsh areas. Several alternatives are applicable to address the solvent contamination in the groundwater; however, remediation will most likely combine source control and/or active remediation with natural attenuation.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN:
VOCs

MEDIA OF CONCERN:
Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199105	200709
RD	200509	200809
RA(C)	200509	200909
RA(O)	200509	203909

RIP DATE: 200909
RC DATE: 203909

CLEANUP STRATEGY

A TI waiver with an alternative remedial strategy involving source reduction, MNA and wetland augmentation are the likely remedy components that will be covered under the PBC for the first five years (site # PBC at APG).

Unconfined Groundwater
EANS01-A

SITE DESCRIPTION

A surficial aquifer of hydraulically unconfined groundwater exists in the upper 40 ft of stratigraphy at the Nike Site. Groundwater sampling performed during the RI identified a plume of TCE in the surficial aquifer at concentrations up to 299 ug/L. The exact source of the TCE contamination is unknown. Based on collected water level data, the predominant direction of groundwater flow in the vicinity of the site is to the south-southeast; however, a small component of groundwater flows north toward the Installation boundary. The TCE plume extends beyond the boundary. The groundwater in this area is not used as a drinking water source.

A ROD for the installation of extraction wells and construction of a groundwater remediation system to treat the TCE was signed in September 1996. An ESD to change the treatment technology from reductive dehalogenation to liquid-phase carbon adsorption was issued in October 1998. The treatment system began 24-hour operation in January 2000 and treats ~450,000 gallons per week.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN:
TCE

MEDIA OF CONCERN:
Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199201	199609
RD	199606	199902
RA(C)	199901	199910
RA(O)	199910	201410
LTM	201410	203709

RIP DATE: 199910
RC DATE: 201410

CLEANUP STRATEGY

Based on the ROD, the contaminated groundwater is being extracted and treated above ground using granular activated carbon until the concentration of TCE is less than the MCL (5 mg/L).

Southwest Launch Landfill
EANS01-D

SITE DESCRIPTION

The Southwest Launch Landfill is approximately 1.1 acres and contains primarily construction debris and some asbestos materials. In addition, several 55-gallon drums labeled “hydraulic fluid” were found lying empty on their sides at the site, which suggests waste may have been disposed of there.

A ROD for this site was signed in September 1996. The ROD called for an impermeable cap comprised of several layers: the waste materials; a cover soil layer; layers of geotextile, including a gas collection layer; an impermeable clay (bentonite) layer; an impermeable, low-density polyethylene layer; a water conveyance layer; a fill material layer; a topsoil layer; and a layer of vegetation over the top. Construction of the former Nike Site Launch Southwest Landfill cap was completed in June 1998.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN: Debris, Asbestos

MEDIA OF CONCERN: Soil

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199201	199609
IRA	199412	199505
RD	199606	199806
RA(C)	199709	199810
LTM	199810	203709

RC DATE: 199810

CLEANUP STRATEGY

Long-term monitoring of the Southwest Launch Landfill cap will continue indefinitely.

D-Field Aerial Spray Grid - Cluster 4
EAOE04

SITE DESCRIPTION

Cluster 4 (D-Field Aerial Spray Grid) is located within the Coopers Creek Investigation Area. Cluster 4 (D-Field Aerial Spray Grid) is located within the Coopers Creek Investigation Area. Test sites that date back to WWI surround the Aerial Spray Grid in one of the most active test areas (D-Field) of the Other Edgewood Areas (OEAs). Trench warfare sites, disposal trenches, test bunkers, and an impact area all share part of the Cluster 4 designated area. Surface and aerial magnetometer survey anomalies (disposal sites, etc.) attest to the extent of test activities. The ASG site was primarily established to test aircraft-mounted aerial spray tanks for dispersion of chemical agents and probably agent simulants. Because of the nature and extent of test activities, ground water soil, surface water and sediments have been extensively sampled. Metals have been detected in soil (e.g., lead at 209 ppm and zinc at 2,060 ppm) and sediment (e.g., barium at 196 ppm and zinc at 13,600 ppm) above ecological risk screening criteria. RDX and low level VOCs have been detected in groundwater samples. The site is within the Coopers Creek Investigation Area, although some drainage goes into Bush River to the east and Target Track Creek to the south.

A shoreline disposal site was located north of Sandy Point. An emergency removal action was completed at the site resulting in the removal of over 350 rounds. Shoreline stabilization of the D-Field Shoreline was initiated FY04 to address the potential of wastes continuing to erode into the Bush River during shoreline buff erosion. As part of the IRA, shoreline stabilization will be completed in FY06, followed by re-vegetation efforts in 2007.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
Metals, Explosives Related Compounds, Pesticides, CWM, Mustard Deg. Product, UXO

MEDIA OF CONCERN:
Groundwater, Soil, Sediment, Surface Water

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199006	200909
IRA	200201	200609
RD	200909	201009
RA(C)	201009	201109

RC DATE: 201109

CLEANUP STRATEGY

After the ROD is signed, source and waste removal is anticipated at inland disposal sites. Dependent upon size, some inland disposal sites may involve capping due to the cost benefits in comparison to removal options.

G-Field Wastewater Treatment Area - Cluster 8
EAOE08

SITE DESCRIPTION

Cluster 8 (G-Field Wastewater Treatment Area) is located within the Wright Creek Investigation Area. The G-Field wastewater treatment system for the Weapons Assembly Plant and support buildings consists of a 750-gallon capacity septic tank system. The system received support building shower, sink, toilet and floor drain wastewaters. Floor drain waters from the assembly plant were not disposed of via the wastewater treatment system. Munitions impact activities have occurred in Cluster 8. Bunkers (concrete, earthen, and composite), a bomb casing dumpsite, and drum storage/disposal facilities (over 90 drums) were also found in Cluster 8. Munitions disposal occurred in the northern portion of the Cluster. Troop training also occurred north and west of the plant. Strategic Plan media (surface water, sediment, and surface soil) and groundwater sampling has been completed in Cluster 8. Groundwater and media sampling were completed in FY04. The draft RI report will be completed FY05. During clearance activities for previous field sampling, a high confidence mustard-filled Livens projector round was discovered. It is anticipated that there may be risk associated with the metals concentration in the soils and sediments. Groundwater and media sampling was completed in FY04. Concurrence of sufficient media sampling was received from USEPA and MDE and a draft RI report is to be completedFY05.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
Metals, UXO, Mustard

MEDIA OF CONCERN:
Soil, Surface Water, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
IRA	199206	199211
RI/FS	199606	200909
RD	200909	201009
RA(C)	201009	201109

RC DATE: 201109

CLEANUP STRATEGY

Perform test digs and confirmation soil sampling at burn trench. Removal Actions may include waste removal, soil removal (~460 cy) and abandonment of the bunkers and bomb dump site. The possibility exists that UXO in the area may contain CWM.

H-Field Washrack and Storage Area - Cluster 12
EAOE12

SITE DESCRIPTION

Cluster 12 (H-Field Washrack and Storage Area) is located within the Western Shore Investigation Area. Vehicle testing in the H-Field area is primarily conducted using tanks. Tanks both in a firing and non-firing mode traverse combined serpentine and linear-paved roadway courses. The track extends from the support buildings (office, maintenance, storage, and data collection) in an east-northeast direction across former artillery impact areas. On the south side of the track area, sets of concrete targets extend parallel or sub parallel to the tank courses for over 3,000 feet. In the support area, vehicles are maintained, configured, and cleaned. The wash rack, vehicle yard, and fuel/oil storage facility serve the test vehicles. Numerous sediment retention ponds and low-profile mounds exist to the south and west of the area. Some mounds have buried magnetic anomalies and some have exposed potentially contaminated material. Strategic Plan media (surface water, sediment, and surface soil) and groundwater sampling has been completed. Additional groundwater sampling does not exceed RCRA characteristics and there is no free product of the BTEX. Soil samples for TPH do not exceed the state criteria.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
CWM, UXO

MEDIA OF CONCERN:
Soil

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199006	200909
RD	200910	201009
RA(C)	201010	201109

RC DATE: 201109

CLEANUP STRATEGY

In FY06, test digs and soil sampling were conducted within the mound area west of Ricketts Point Road. The draft RI Report is anticipated in FY07. Based on the Ecological Risk Assessment and recommendation in the RI, hot spot removal to address the mounds and associated waste may be conducted.

Minefield/Prototype Building Storage Area - Cluster 16 EAOE16

SITE DESCRIPTION

Cluster 16 (M-Field Mine Field/Prototype Building Storage Area) is located within the Swaderick-Watson Creek Investigation Area. The WWII Prototype Building has been used as a bomb target in training exercises and as a temporary storage facility. At the end of the trench there are several disposal pits containing incendiary device fuses. A tunnel complex also exists northwest of the Prototype Building. The M-Field Minefield is located south of the trench. The minefield was a test area where mines were buried and later excavated. It is unknown when the minefield was active, and it is not certain that all of the mines or mine remnants were removed from the area. Push-outs and burn trenches south of the minefield possibly contain test waste materials from M-Field and materials from testing in adjacent fields.

Limited sampling of the area during a 1994 removal action did not reveal evidence of burning, however it is not certain that the visibly scarred area was sampled. During sampling efforts in 2000, concentrations of magnetic debris were detected using a magnetometer in several locations. Test digs were conducted FY05 and indicate waste disposal at the site. Based on data collected, the trench is 500 feet long by 25 feet wide. Waste is present to 3 feet below ground surface. Items identified include ash and slag from burning activities in addition to munitions dispensers, base plate, and munitions fragments.

Strategic Plan media (surface water, sediment, and surface soil) and groundwater sampling has been completed. Additional DPT groundwater sampling was completed down gradient of prototype building to delineate RDX and VOC concentrations; the analysis of test results indicate additional sampling is required to delineate the extent of the plume.

Subsurface soil samples and test digs were conducted in the trench during FY05 and FY06.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
VOCs, UXO, Explosive Related Compounds, Metals

MEDIA OF CONCERN:
Soil, Surface Water, Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
IRA	199502	199502
RI/FS	200010	200909
RD	200909	201003
RA(C)	200909	201009
RA(O)	201010	203909

RIP DATE: 201010
RC DATE: 203909

Minefield/ Prototype Building Storage Area - Cluster 16 EAOE16

CLEANUP STRATEGY

Additional groundwater sampling will be conducted to delineate VOC and RDX contamination in the vicinity of the prototype building, burn trench, and tunnel complexes based on analytical results was funded in FY06. Additional media sampling is scheduled. RA for the Cluster 16 groundwater may involve soil vapor extraction or other source removal and Monitored Natural Attenuation parameter sampling. RA involving soil excavation from the trench is anticipated.

Fort Hoyle Training Area - Cluster 19
EAOE19

SITE DESCRIPTION

Cluster 19 (Fort Hoyle Training Area) is located within the Gun Club Creek Investigation Area. The Fort Hoyle Training Area is located south of the existing Edgewood Area barracks. Although little is known about the training conducted in this area (WWI to WWII), it is known that training included the use of chemical warfare materiel. Chemical odors observed during the construction of the Wheeled Vehicle Facility (1980s) in the Fort Hoyle Area prompted sampling and analysis of the site. Other potential sources of contamination in the area are the Douglas Road Munitions Disposal Site and nine Drum and Junk dump sites.

Surface water, sediment, surface and subsurface soil, bioassay, and DPT groundwater sampling efforts have been conducted in support of the RI. Metals, PAHs, and pesticides have been detected in soil in Cluster 19 above ecological risk levels. Thiodiglycol was detected at 9,370 ppb. Sustained lead concentrations in surface water ranging up to 63 ppb above ecological risk levels have been detected. Geophysical x-ray fluorescence, and soil gas surveys have defined the extent of waste disposal areas. In FY04 further characterization and excavation was performed at the nine Drum and Junk sites and thiodiglycol site.

DPT sampling further indicates the presence of solvents (TVOCs ranging up to 46,161 g/L) in the groundwater north of the Wheeled Vehicle Facility. Additional groundwater characterization was conducted in 2002 including the installation of prepack wells to determine the extent of the VOC plume distribution, groundwater flow directions, hydraulic gradients, and groundwater quality for a natural attenuation evaluation. Additional monitoring wells were installed within the VOC plume to supplement the data for the Gun Club Creek Risk Assessment. All wells within Cluster 19 were evaluated for Natural Attenuation parameters. Subsurface soil samples collected from the vadose zone contained VOCs exceeding criteria. Draft Groundwater RI/FS Report for Cluster 19 and Gun Club Creek Overall RI Report scheduled for FY06.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN:
VOCs, Metal

MEDIA OF CONCERN:
Soil, Groundwater, Surface Water, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
IRA	199311	199408
RI/FS	199606	200709
LTM	200710	203709

RC DATE: 200709

CLEANUP STRATEGY

The VOC plume is addressed in the groundwater Performance Based Contract (PBC at APG). LTM will consist of LUCs for thirty years, with the first five years being captured under the PBC. No other RA is anticipated for the Gun Club Creek Investigation Area.

L-Field Demolition and Propellant Disposal Site - Cluster 22 EAOE22

SITE DESCRIPTION

Cluster 22 (L-Field Demolition and Propellant Disposal Site) is located within the Coopers Creek Investigation Area. The L-Field Demolition and Propellant Disposal Site is at the end of and adjacent to the road extending southeastward beyond the target area of the Ballistic Track. Aerial photographs from the 1960s and 1970s indicate that the area was first cleared and used during the 1960s. Portions of the area are still bare of vegetation and the surface soils contain few fragments of munitions by visual inspection. It is possible that some of the waste material at the site is from the dumping of waste materials from operations at the test track.

Geophysical surveys (EM/MAG) were conducted in five suspect disposal areas. Surface water, sediment, surface soil, and DPT groundwater sampling has been conducted in the area in support of the RI. Low-level VOCs were detected in the groundwater at four locations. Perchlorate was detected in six locations in the vicinity of the east end of the rocket sled.

Test digs followed by surface and subsurface soil sampling confirmed the presence of waste in suspect disposal sites.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
Metals, Explosive Related Compounds, UXO, Perchlorates, VOCs, Pesticides

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200010	200909
RD	200909	201009
RA(C)	200909	201109
LTM	201110	202109

RC DATE: 201109

CLEANUP STRATEGY

Additional groundwater sampling is planned to delineate potential VOC contamination. Additional media sampling may be required to further assess sites within Cluster 22. RA may include waste removal at disposal locations, hot spot removal, and long-term monitoring.

I-Field Japanese Bunker Area - Cluster 23
EAOE23

SITE DESCRIPTION

Cluster 23 (I-Field Japanese Bunker Area) is located within the Boone Creek Investigation Area located in the southern portion of I-Field. The bunkers are steel-reinforced concrete with walls approximately 4-feet thick. The bunkers have been subjected to static and drop device blasts sufficient to rupture and penetrate the concrete walls and roofs. Although the bunkers contain test-related materials (equipment, munitions, and test equipment), there is no indication that chemical agents were used in the tests. South of the bunkers, at the edge of the wetland, is the munitions disposal site (25 foot diameter crater with shallow flooding). Near the disposal site crater are several other similar land-based, water-filled craters that may contain disposed material. Chemical materiel burn pans are located between two of the bunkers. The pans were used in a MDE approved detonation to destroy laboratory unknowns. Strategic Plan media (surface water, sediment, and surface soil) and groundwater sampling has been completed. Additional media sampling has been collected from the interior of the bunkers.

An IRA was initiated in FY04 to remove the contents of Bunkers A and F and has been competed.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
Metals, UXO, Explosives

MEDIA OF CONCERN:
Soil, Sediment, Surface Water

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199606	200909
IRA	200304	200504
RD	200910	201009
RA(C)	201010	201109

RC DATE: 201109

CLEANUP STRATEGY

Additional media sampling is currently underway. RA is anticipated to involve waste removal from the disposal crater and surrounding marsh area. No LTM is anticipated.

M-Field Southeast Test and Burn Area - Cluster 24
EAOE24

SITE DESCRIPTION

Cluster 24 (M-Field Southeast Test and Burn Area) is located within the Swaderick-Watson Creek Investigation Area. The southern portion of M-Field and the adjacent fields have been used for a variety of testing activities. A minefield, frame-silhouette targets, and both a bombproof trench and a burn trench are located in the southern portion of M-Field. Firing of rockets at targets in this area is from as far away as G-Field. Although most of the debris burned in the trenches is believed to have originated from M-Field activities, materials may have originated from surrounding area tests. Test digs conducted at the site in FY06 identified two waste disposal trenches at the site. Based on field measurements and test digs, size of Trench #1 is 15 feet by 35 feet. Size of Trench #2 is 4 feet by 10.5 feet. Both trenches contain waste to 6-12 inches below ground surface. Waste identified in the trenches includes 66 millimeter tea rocket fragments, sand bag cloth, linoleum tiles, and metallic debris.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
Metals, UXO, Explosive Related Compounds, Pesticides

MEDIA OF CONCERN:
Soil, Sediment, Surface Water

Phases	Start	End
PA	197606	198912
SI	197606	198912
IRA	199502	199502
RI/FS	200010	200909
RD	200910	201009
RA(C)	201010	201109

RC DATE: 201109

CLEANUP STRATEGY

Waste excavation is the anticipated RA for this site. After the waste has been removed, regulatory closure will be requested.

M-Field Tunnels and Test Slab Areas - Cluster 26
EAOE26

SITE DESCRIPTION

Cluster 26 (M-Field Tunnels and Test Slab Areas) is located within the Swaderick Watson Creek Investigation Area. The M-Field Concrete Slab was constructed in 1942 and measures 300 ft in length and width. A vertical concrete target wall (structure E7244) was constructed after the original slab. The height of the original vertical target wall was 25 ft and extended 75 ft across the southern side of the slab. In 1949, an additional 15 ft was constructed on the original wall to make the height 40 ft. Throughout the World War II and continuing into present day, APG has used the slab as a test site. Most of the testing has been with chemical ordnance, primarily incendiary, smoke, and simulant-filled items. Testing operations resulted in solid waste disposal along the perimeter of the slab, primarily the south and southeast sides. The majority of the solid waste is comprised of the remains of incendiary munitions (e.g., 6 and 10 pound illumination and incendiary rounds) and miscellaneous waste (e.g., metal scrap, empty drums, pipes).

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
Metals, VOCs, Explosive Related Compounds

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200010	201009
RD	200809	201103
RA(C)	200909	201109
LTM	201109	202109

RC DATE: 201109

Tunnel complexes designed for the testing of materials to deny enemy troop entry into tunnels was conducted at three tunnel complexes in M-Field. The northern most and largest complex consisted of four parallel zigzag tunnels. Two parallel zigzag tunnels were located near the M-Field bunker, and another tunnel complex was located northwest of the prototype building. Most of the tunnels were either buried or have collapsed. Soil gas sampling has been conducted at the tunnel complexes. This site also includes a 1930 chemical lab and other buildings.

CWM may be present at the site. Test digs were conducted FY05 and indicate waste disposal activities at the test slab and surrounding area.

Groundwater will be sampled for explosives, perchlorates and VOCs in accordance with regulatory guidance.

CLEANUP STRATEGY

An RA will be conducted to remove waste associated with the disposal at the test slab. Additional groundwater sampling for RDX and perchlorate at the test slab is currently underway. Groundwater monitoring for ten years is required.

M-Field Pre-WWII Agent Test Site - Cluster 27
EAOE27

SITE DESCRIPTION

Cluster 27 (M-Field Pre-WII Agent Test Site) is located within the Swaderick-Watson Creek Investigation Area. As early as the 1920s, field-testing of lethal chemical agents was conducted at the Edgewood Area of APG. These tests were conducted primarily in five test areas of M-Field. The test sites were located southeast of the M-Field bunker where the open grassland terrain slopes gradually to the south and southeast to a fringe wetland of Watson Creek. Containers of agent were explosively burst during static tests.

Groundwater, surface water, sediment, and soil sampling completed at the site. Test digs and soil sampling conducted in FY05 indicate waste disposal at Test Sites A and D.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
Solvents, UXO, Metals, CWM

MEDIA OF CONCERN:
Soil, Surface Water, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200010	200909
RD	200909	201009
RA(C)	201009	201109

RC DATE: 201109

CLEANUP STRATEGY

Items identified in sampling results include Stokes mortar pieces, 4.2 mortar pieces, buried drums, and munitions dispensers, The combined volume of the 2 sites is less than 1 acre. RA is anticipated to include hot spot removal to address the test and disposal areas.

H-Field Concrete Target Area - Cluster 28
EAOE28

SITE DESCRIPTION

Cluster 28 (H-Field Concrete Target Area) is located within the Boone Creek Investigation Area. The H-Field Target Area and surrounding areas of Cluster 28 have been used for a variety of testing activities including chemical agent firing. The Pre-WWII Artillery Target Area II is also located in H-Field. Simulated tank turrets, a tank, several large craters, burn scars, bombed/blasted out concrete buildings, a large aboveground tank, munitions disposal site, and approximately 10 drums are present in the area. Steel-reinforced concrete target slabs (a 3,000-foot long array of two parallel lines of vertical slab sections) served as targets or target backstops. At the eastern end of the cluster is a disposal area with munitions fragments, empty containers (such as hydraulic fluid cans), and miscellaneous potentially contaminated test material. At the western end of the parallel concrete targets, a large pile of sand and gravel exists between the two slabs. Examination of this sand and gravel pile revealed fragments of rocket motors, smokeless powder grains, and fragments of rocket propellant, indicating that the pile was probably also used as a target. No contamination above criteria was detected from the soil samples from the sand and gravel pile and munitions disposal sites. Strategic Plan media (surface water, sediment, and surface soil) and groundwater sampling has been completed.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS: Explosives, UXO, CWM, SVOCs, Metals, Perchlorates

MEDIA OF CONCERN:
Soil, Surface Water, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200010	200909
RD	200809	201009
RA(C)	200909	201109

RC DATE: 201109

CLEANUP STRATEGY

Additional groundwater and media sampling is currently underway to determine the impact from past testing and disposal activities. A comprehensive site reconnaissance and limited geophysical surveys will be performed to confirm suspect disposal areas (funded FY04). RA is anticipated to include waste and soil removal at the munitions disposal site. Wells will be positioned around a 5-acre munitions disposal site and monitored. LTM may be required based on groundwater sampling results.

Maxwell Point Test Site - Cluster 29
EAOE29

SITE DESCRIPTION

Cluster 29 comprises the Maxwell Point Investigation Area. Testing on the point has included smoke generator testing, munitions firing to the Graces Quarters impact area, drop/slide testing of cargo containers, grenade testing (drop tower with a large water pit), and a variety of testing that required bomb proofs. Additional structures onsite have included a munitions disposal site, a steel-fenced munitions storage area, fuel storage tanks, and a septic system. Other foundations and materials are also found throughout the wooded areas of Maxwell Point.

Offshore geophysical surveys were performed on the north and south shore zones of Maxwell Point to identify any large-scale disposal sites. No large areas of potential disposal were identified. Additional land based geophysical surveys were conducted in April 2001 over suspect cleared areas. Soil hot spot and waste removal was conducted as an IRA to address metals contamination at the generator debris site in the vicinity of the smoke generator debris (completed FY05).

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
Metals, SVOCs, UXO, CWM

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199910	200909
RD	200809	201103
RA(C)	200909	201109
RA(O)	201009	202109
LTM	202110	204109

RIP DATE: 201109
RC DATE: 202109

Available data has identified a volatile organic compound (VOC) groundwater plume from past releases of chlorinated solvents and hydrocarbons at the former Building E7365/E7368 Test Site. The highest total VOC concentrations (up to 3,887 µg/L) in surficial aquifer groundwater are 39 feet below grade or 20 feet below msl. These VOC concentrations do not suggest the presence of dense non-aqueous phase liquid. There are at least five separate VOC source area groupings feeding into the surficial aquifer. The presence of these source areas is based on the spatial relationship of individual VOCs detected, perceived groundwater flow directions, and VOC detections in the vadose zone from 9 to 12 feet below grade. Based on available data, both Source Reduction and Natural Attenuation Monitoring could be required.

CLEANUP STRATEGY

Offshore porewater samples will be conducted to determine if VOC contamination at the western end of Maxwell Point is discharging into the Gunpowder River and posing an ecological risk. Source remediation and monitored natural attenuation may be required to address the 5 source areas of VOC groundwater contamination followed by LTM (gw monitoring). Soil remediation is anticipated to address Metals Contamination at Building E7340/E7350 Test Site.

C-Field Munitions Burial Site - Cluster 30
EAOE30

SITE DESCRIPTION

Cluster 30 (C-Field Munitions Burial Site) is located within the Doves Cove Investigation Area. The Building E1412 Munitions Burial Site is located within the northwestern portion of C-Field, east of Ricketts Point Road. As early as World War I, the C-Field area has been used extensively for both testing and training activities, including use as an impact area. During recent decades, a firing point in eastern C-Field has also been used for munitions testing and for rocket firing into L-Field and D-Field. During construction of Bldg. E1412, buried rockets were discovered at the site. However, the specific location of this site has not been identified at this time.

Bldgs. E1407 and E1415 are within the northwestern portion of C-Field, east of the juncture of Gantz and Ricketts Point Rds. Built during WWI, these buildings were used for storage and maintenance in support of miscellaneous C-Field test activities, including rocket firing, munitions testing, and tests conducted at the Vibratory Test Facility. Bldg. E1407 was also originally used as an ammunition assembly plant. The wastewater treatment system for Bldgs. E1407 and E1415 is comprised of a 1,000-gallon septic tank with an associated leachate/drain field. The septic tank is located ~350 ft. north-northwest of Bldg. E1407 and the leachate/drain field is immediately north-northwest of the septic tank. Small quantities of hydraulic fluid, metals and equipment cleaning solvents in support of testing operations would also have been handled at this site.

In 1995, a removal action was completed at the Bldgs E1407/E1415 septic tank by removing impacted soil from the vicinity of the tank and the septic tank's contents. A 5 x 5 ft. area was excavated to a depth of 4 ft.

Strategic Plan media (surface water, sediment, and surface soil) and groundwater sampling has been completed. The explosive related compound RDX and 1,1-Dichloroethene were detected during the Phase I Strategic Plan DPT groundwater sampling. Detections of both compounds were repeated during Phase II sampling.

Further groundwater sampling has shown that there is not significant risk posed from groundwater contamination. Additional groundwater and media sampling was completed FY04. Based on these analytical results, 2 wells have been installed and sampled four times (funded FY04). Metals contamination does not pose an ecological threat per the Risk Assessment. No remedial action is expected.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS OF CONCERN: Metals, VOCs, Explosive Related Compounds

MEDIA OF CONCERN: Soil, Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200010	200909

RC DATE: 200909

C-Field Munitions Burial Site - Cluster 30
EAOE30

CLEANUP STRATEGY

Received concurrence from USEPA and MDE; draft RI report to be completed FY07 with ROD pending in 2009.

H-Field Tank Test Range - Cluster 31
EAOE31

SITE DESCRIPTION

Cluster 31 (H-Field Tank Test Range) is included in the Boone Creek Investigation Area. The Tank Test Range in H-Field extends from a support building area eastward across the Gunpowder Neck, ending at a triangular moving target track in southern D-Field. Cluster 31 consists of the southwestern two-thirds of the track. The tank track consists of straight roadways and a serpentine test track. Testing involves firing while maneuvering along the track and over "alternating track speed bumps." The test range includes firing points, a vehicle track, a track-mounted moving target, and buildings that support (vehicle maintenance, development, and lubrication) the test operations. The track also traverses two areas previously used as artillery impact areas. Support buildings (Cluster 12) have storerooms for petroleum lubricants, offices, and restroom facilities. During the 1920s and 1930s, open air and static air testing of chemical agents and ordnance was conducted in H-Field. The Pre-WWII Artillery Target Area III is also located in Cluster 31 H-Field was used as a range for mustard-, phosgene-, and other agent-filled munitions.

Sampling was conducted in fall 2001. Results indicate no further groundwater investigation is needed. Groundwater, surface water, sediment, and soil sampling completed at the site. No remedial action is expected.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
Metals, CWM

MEDIA OF CONCERN:
Soil, Surface Water, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200010	200909

RC DATE: 200909

CLEANUP STRATEGY

Draft ROD and request site closure in 2009.

D-Field Chemical Agent Test Grid - Cluster 37
EAOE37

SITE DESCRIPTION

Cluster 37 (D-Field Chemical Agent Test Grid) is included in the Coopers Creek Investigation Area. A prominent tower still stands at the northern edge of the Chemical Agent Test Grid Area. Testing in the area involved the firing of munitions from the tower into two circular test grids with monitoring equipment or staked animals. Chemical agents and chemical agent munitions were tested in the grid areas; some of the tests could have involved static testing. Often the tests used highly volatile G-agents (i.e., GA, GB, and GD). Mounds and abandoned rusted drums are located downgradient of the test area in a drainage swale. Further down gradient, drums of decontamination materials were unearthed during construction of a roadway extension into H-Field. Metals (e.g., copper at 69.9 ppm) have been detected in soils above ecological risk levels.

Thiodiglycol was detected in surface water and sediment samples ranging up to 61,300 ppb. Additional samples were collected in a grid around the two original locations and analyzed for thiodiglycol and organosulfur compounds. Additional samples did not detect thiodiglycol or organosulfur compounds; air monitoring results did not detect agents.

Test digs were conducted to further characterize any potential waste at the thiodiglycol area; evidence of drums was not encountered.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
UXO, Agent Degradation Products, Explosive Related Compounds

MEDIA OF CONCERN:
Groundwater, Sediment, Surface Water

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199006	200909
RD	200909	201002
RA(C)	201009	201109

RC DATE: 201109

CLEANUP STRATEGY

RA may include the removal of potentially contaminated material through out the Cluster 37 area. DPT groundwater samples will be collected in the vicinity of the thiodiglycol detections. Further remedial actions will be based on groundwater sample results.

K-Field Demolition Field - Cluster 38
EAOE38

SITE DESCRIPTION

The K-Field Demolition Ground is located between Wright Creek to the south and Gun Club Creek to the north. The creeks and associated wetlands, along with a range fence, surround the site. The site is accessible only via a dirt road placed across a broad wetland to the west of the site. The area was used for demolition of small munitions (limited proximity of cantonment area) and for training activities of the 149th Ordnance Detachment. Demolition activities were curtailed in the late 1970s or early 1980s. Spent/practice munitions are found scattered in the southeast edge of the area and small explosion craters are located in the southern portion of the site clearing. Surrounding the small craters, bare soil (ground scar) is prevalent with only sparse vegetation. Spent rifle cartridges are scattered in the soil around the pits. Large trenches (containing water) are found in the woods to the east of the clearing. One large pond is located about 100 yards south of the clearing. Training materials and junk automobiles were located in the adjacent woods. Sediment, surface water, soil, and groundwater samples have all been recently collected from Cluster 38. Groundwater contamination at 3 feet below the ground surface indicates VOCs. Characterization of demolition craters and perimeter of the site were completed in FY04. No RA is anticipated at this time.

The Draft RI Report is due 2006. The HH and ECO Risk Assessment are required to verify that no RA is anticipated at this time.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
Metals, VOCs

MEDIA OF CONCERN:
Soil

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199912	200909

RC DATE: 200909

CLEANUP STRATEGY

No remedial action is expected. Draft ROD to receive regulatory site closure.

C-Field Wastewater System - Cluster 39
EAOE39

SITE DESCRIPTION

The Cluster 39 (C-Field Wastewater System) is located within the Doves Cove Investigation Area. C-Field is an open grassland area adjacent to Range Control in the northern portion of the OEA range. Buildings E1400 and E1401 lie within the northwestern portion of C-Field, east of Ricketts Point Road and slightly northwest of Wilson Point Cove. The two buildings were constructed during World War I for use as maintenance facilities. As the largest structure in C-Field, Building E1401 has been used for storage in recent years. The wastewater treatment system for Buildings E1400 and E1401 consists of a 500-gallon septic tank and two leachate/drain fields. The septic tank is located about 100 feet northwest of the northern corner of Building E1401. The 2 leachate/drain fields are located immediately northwest and north-northeast of the septic tank. A UST discovered west of Building E1401, will not be handled under the IRP. Small quantities of hydraulic fluid and equipment cleaning solvents in support of testing operations were also handled at this site.

STATUS

REGUALTORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
Metals, PAHs

MEDIA OF CONCERN:
Surface Water, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200010	200909

RC DATE: 200909

In 1995, a removal action was completed at the Buildings E1400/E1401 septic tank by removing impacted soil from the vicinity of the tank and the septic tank's contents. Two 5-foot by 5-foot areas were excavated to a depth of 2 feet.

Strategic Plan media (surface water, sediment, and surface soil) and groundwater sampling has been completed.

CLEANUP STRATEGY

Additional groundwater and media sampling was completed FY04. Received concurrence from USEPA and MDE; draft RI report to be completed FY07.

G-Field Tunnel Complex - Cluster 41
EAOE41

SITE DESCRIPTION

Cluster 41 (G-Field Tunnel Complex) is located within the Swaderick-Watson Creek Investigation Area. The G-Field Tunnel Complex consists of three zigzag tunnels in a general east-west configuration. The tunnels are approximately 100 yards northwest of the intersection of Ricketts Point and Maxwell Point Roads. The location of the tunnels is presently marked by shallow depressions that retain water after heavy precipitation events. The model tunnels (similar to enemy tunnels) were used to test agents and chemicals to deny enemy troop entry into tunnels. The tunnels were probably 5' high by 3' wide. The G-Field tunnels, like others in M-Field, were constructed with combinations of wood, sheet metal, and concrete. Lineaments observed in aerial photographs indicate the possibility of additional trenches or tunnels north of the tunnel complex, across Maxwell Point Road.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN: Agent Deg Products, VOCs, SVOCs

MEDIA OF CONCERN: Surface Water, Sediment, Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199910	200909
LTM:	200910	201909

RC DATE: 200909

Strategic Plan media (surface water, sediment, and surface soil) and groundwater sampling has been completed. DPT groundwater samples contained the VOCs cis-1,2-DCE at 92 ppb, TCE at 63 ppb, 1,1-DCE at 8 ppb, and vinyl chloride at low levels.

CLEANUP STRATEGY

Groundwater activities currently underway to determine if an active source is contributing to the VOC concentrations. No RA is anticipated at this time but LTM may be required.

M-Field Clothing Shack Area - Cluster 42
EAOE42

SITE DESCRIPTION

Cluster 42 (M-Field Clothing Shack Area) is located within the Swaderick-Watson Creek Investigation Area. A group of several small buildings and fuel-type tanks at the intersection of Maxwell Point and Watson Creek Roads comprise the Clothing Shack Area. These small buildings were constructed during the 1940s; it is believed that they were used primarily for storage and as a clothing change house. One (or two) additional building (since removed) existed across Maxwell Point Road during the time of training activities. The buildings were used for support and storage of materials related to clothing contamination and decontamination training exercises. A trailer mounted clothing impregnation unit may have been used at this location in conjunction with training activities. North of the building area (about 75 yards) several mounds (6 to 8 feet high and 10 to 20 feet long) of push out material exist at the edge of a Swaderick Creek wetland. The mounds may contain materials disposed as a result of training exercises. A disposal site of white phosphorus bursting grenades exists in this area. A geophysical survey was conducted over the area to determine the size and extent of the grenades and soil from area was sampled.

Groundwater activities were completed in FY05 and did not detect any contaminants or contributing sources. Groundwater is not considered a media of concern.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN: UXO

MEDIA OF CONCERN: Soil

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199912	200909
RD	200910	201009
RA(C)	201010	201109

RC DATE: 201109

CLEANUP STRATEGY

Removal of waste and soil may be required in push out and waste disposal areas (i.e. bursting grenade area). Upon waste removal, regulatory site closure will be requested.

M-Field Grenade Range - Cluster 43
EAOE43

SITE DESCRIPTION

Cluster 43 (M-Field Grenade Range) is located within the Swaderick-Watson Creek Investigation Area. The M-Field Grenade Range is located just southwest of the intersection of Maxwell Point and Watson Creek Roads. The firing point for this range was near the twin towers south of Maxwell Point Road and west of Watson Creek Road. Grenades and other munitions were fired from the firing point near the Twin Towers (Cluster 44) in an east-southeasterly direction. The tested materials would impact targets and/or the 12 ft. high earthen backstop located onsite. The mound is located less than 75 yards from Watson Creek Road. The firing line and mound are located adjacent to a wetland area that drains via a small creek (locally identified as Twin Tower or Lumber Yard Creek) into the Gunpowder River. The range was approximately 975 ft. in length and was actively used until the early 1970s for the testing of 40mm CS and smoke grenades and possibly other munitions.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN: UXO, Metals, Explosive Related Compounds, Chemical Agent Degradation Products

MEDIA OF CONCERN: Soil, Surface Water, Sediment, Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200010	200909

RC DATE: 200909

Media (surface water, sediment and surface soil) sampling completed and did not indicate contamination.
Site reconnaissance and test digs conducted at the site did not indicate disposal activities at the site. No RA is anticipated.

CLEANUP STRATEGY

Draft ROD requesting regulatory site closure.

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M-Field Bomblet Projector - Cluster 44
EAOE44

SITE DESCRIPTION

Cluster 44 (M-Field Bomblet Projector) is located within the Swaderick-Watson Creek Investigation Area. The M-Field Bomblet Projector (Twin Towers) was located southwest of the intersection with Maxwell Point and Watson Creek Roads. The towers complex was built in the 1957-58 timeframe. The towers were to be used as a launching platform for bomblets fired down a cable. The cable was stretched from the towers to a concrete-based metal anchor point north of Maxwell Point Road. The cable was tightened with a hand winch 30 feet from the anchor point. Modified drop tests were to be performed by sliding bomblets and/or propelling rockets down the cable; however, it is possible that the facility was never used as intended. Cable fragments are located near the anchor point, but evidence of actual bomblet/rocket tests is not obvious. Currently, meteorological and radio antennas have been placed on the towers. Possible disposal mounds are located northwest and northeast of the towers.

Site reconnaissance and test digs conducted at the site did not indicate disposal activities at the site. No RA is anticipated at this time.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN: Explosives, Metals

MEDIA OF CONCERN: Soil, Surface Water, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200010	200909

RC DATE: 200909

CLEANUP STRATEGY

Draft ROD requesting regulatory site closure.

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E-Field Legos Point Impact Area - Cluster 45
EAOE45

SITE DESCRIPTION

Cluster 45 (E-Field Legos Point Impact Area) is located within the Coopers Creek Investigation Area. The Legos Point Impact Area is located in southeastern E-Field. Legos Point marks the juncture of the Bush River (mouth) and the Chesapeake Bay. The Legos Point Impact Area was identified using aerial photographs taken in 1929 and 1941. The impact area was approximately 850 x 400 ft. wide. The area may have served other test purposes associated with nearby test activities (small buildings adjacent to wetlands near Cluster 46, west of the Impact Area). DPT ground water samples contained moderate levels of metals and SVOCs.

Benzothiazole was detected at 0.9 ppb. Media (surface water, sediment and surface soil) sampling was completed in the area. Surface water, sediment, soil, DPT and groundwater sampling completed at the site. No RA is expected.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN: Metals, Explosive Compounds, Chemical Agent Degradation Products

MEDIA OF CONCERN: Soil, Sediment, Surface Water

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200010	200909

RC DATE: 200909

CLEANUP STRATEGY

Draft ROD requesting regulatory site closure.

E-Field Dredge Spoil Area - Cluster 46
EAOE46

SITE DESCRIPTION

Cluster 46 (E-Field Dredge Spoil Area) is located within the Coopers Creek Investigation Area. The Dredge Spoil Area, approximately 7 acres in area, is located adjacent to the Legos Point Impact Area and may contain munition fragments/material from rounds falling outside the Legos target area bulls eye. Items associated with the Impact Area would be buried in the subsurface dredging activities between 1957-1960. It is known that the channel in the Bush River to the Boone Creek landing was dredged at least once during the period since WWII, and it is presumed that this adjacent area was the source of dredge spoil. The spoil area is west-southwest of the impact area and east-southeast of an area of possible testing activities as observed on aerial photographs (construction debris and/or test debris in push out areas). DPT groundwater samples contained low levels of metals and chloroform.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS: Metals, VOCs, Explosive Related Compounds

MEDIA OF CONCERN: Soil, Groundwater, Surface Water, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200010	200909

RC DATE: 200909

Surface water, sediment, soil, DPT and groundwater sampling completed at the site. No RA is expected.

CLEANUP STRATEGY

Draft ROD requesting regulatory site closure.

L-Field Old Bush River Dock - Cluster 49
EAOE49

SITE DESCRIPTION

Cluster 49 (L-Field Old Bush River Dock) is located within the Coopers Creek Investigation Area. Pilings are all that remain of the L-Field Old Bush River Dock structure located on the Bush River shoreline, approximately 600 ft. north of the mouth of Coopers Creek. The pilings are only visible during periods of low tide. The dock was in use prior to WWII and may have existed prior to the Gunpowder Neck becoming government property. The area was an impact zone as indicated by debris found in the wooded area near the dock. Material may have been fired into the area from various locations.

Surface water, sediment, soil, DPT and groundwater sampling completed at the site. No RA is expected.

CLEANUP STRATEGY

Draft ROD requesting regulatory site closure.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS: Metals, Chemical Agent Degradations Products, Solvents

MEDIA OF CONCERN:
Soil, Surface Water, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	200010	200909

RC DATE: 200909

G-Field Training Area - Cluster 50
EAOE50

SITE DESCRIPTION

Cluster 50 (G-Field Training Area) is located within the Swaderick-Watson Creek Investigation Area. The G-Field Training Area was an impact area for a large portion of the OEAs history. Materials fired into the area would have originated from training activities conducted in the Fort Hoyle Area just south of the cantonment area. During the early history of the Edgewood Area, this area was under the control of Fort Hoyle. Munitions fired into the area would have been primarily HE, smoke, riot control, and incendiary-type munitions; however, it is possible that lethal agent-filled munitions could have been fired into the area during the 1920s and 1930s. A few drums and a water-filled pit were found in the area. In one area, tire stopper blocks were associated with empty drums. It appeared that the drums were of fairly recent vintage (1960s to 1980s) and contained fuel for smoke generators related to training activities.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
Metals, Pesticide

MEDIA OF CONCERN:
Soil, Surface Water, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
IRA	199406	199410
RI/FS	199912	200909

RC DATE: 200909

Surface water, sediment, soil, DPT and groundwater sampling completed at the site. No RA is expected.

CLEANUP STRATEGY

Draft ROD requesting regulatory site closure.

K-Field Pistol Range - Cluster 51
EAOE51

SITE DESCRIPTION

Cluster 51 (K-Field Pistol Range) is located within the Wright Creek Investigation Area. The Range is bordered by the Gunpowder River shoreline and Hoadley Road, at the intersection of Hoadley and Gansz Roads. The range was established during World War II for training and recreational purposes, and was probably used until the 1960s or early 1970s. The firing at the range was toward the Gunpowder River, with the designated danger zone extending more than a mile over the river. Operations at the K-Field Pistol Range would have generated no wastes other than general refuse by the persons using the range. Expended rounds would have impacted in the Gunpowder River and in the soil in the range. Small quantities of gun cleaning materials with solvents would have been handled at the site.

Strategic Plan media (surface water, sediment, and surface soil) and groundwater sampling has been completed. The solvent PCE was detected at a concentration of 3 ppb and the chemical agent degradation product MPA was detected at 24,000 ppb at the south end of the site during Phase I DPT groundwater sampling activities. The PCE detections were repeated during Phase II sampling. Additional groundwater sampling conducted in Fall 2003 indicates that areas of contamination are isolated and previously detected levels are the maximum concentrations.

Surface soil samples indicated elevated metals, SVOCs, and pesticides in the northern area of Cluster 51. Additional groundwater and media sampling completed FY04. Sediment samples collected offshore of the site did not indicate metals contamination. Based on results, DSHE received concurrence from USEPA and MDE on RI approach; draft RI report to be completed FY07.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
Metals, SVOCs, Pesticide

MEDIA OF CONCERN:
Soil

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199912	200909
RD	200910	201009
RA(C)	201010	201109

RC DATE: 201109

CLEANUP STRATEGY

Limited soil removal may be necessary to address metal concentrations in soil on land. The moderate shoreline erosion will need to be addressed in the future.

Maxwell Point Rifle Range - Cluster 52
EAOE52

SITE DESCRIPTION

Cluster 52 (Maxwell Point Rifle Range) is located within the Swaderick Watson Creek Investigation Area. The rifle range is located adjacent to the Gunpowder River shoreline in the southwestern portion of Maxwell Point, south of Swaderick Creek. The range was established during the 1940s and was probably used for training until the late 1960s or early 1970s. The range has four parallel linear mounds located at a designated distance from the target zone. Troops stood on the mounds during rifle firing practice. The target zone consists of an earthen embankment adjacent to a taller, reinforced concrete wall backstop. On the backside of the wall (shoreline side) are the remains of a series of target frames. These frames appear to have been hinged to allow swing away for the replacement of spent targets. After replacement of targets, the target frames were swung into position for the next firing. Also along the shoreline are the remains of what appears to be latrine facilities, perhaps for the crews behind the wall that were in charge of target replacement. Behind the firing range are several small buildings believed to have been storage buildings and a latrine. The latrine wastes went to either a septic tank or dry well. The designated danger zone over the river (behind the backstop) extended up to 2 miles into the Gunpowder River in a south-southwesterly direction toward Carroll Island. Contaminants associated with the range would be solvents used for weapon cleaning and lead and other metals from bullets fired into the target area embankment and concrete backstop wall.

Metal concentrations have been detected in soil above the ecological risk levels (lead 1800ppm, zinc 0.02ppm, copper 463.6ppm, arsenic 4.1ppm). A XRF survey of the firing range was conducted to delineate the extent of metals contamination in late 2001.

This is a closed range that was not identified in the MMRP CTT Range Assessment.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
Metals, PAHs

MEDIA OF CONCERN:
Soil, Sediment, Surface Water

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199912	200909
RD	200809	201009
RA(C)	200909	201109

RC DATE: 201109

CLEANUP STRATEGY

Surface water, sediment, soil, DPT and groundwater sampling completed at the site. Based on sampling results, soil and source removal may be required.

I-Field Impact Area - Cluster 53
EAOE53

SITE DESCRIPTION

Cluster 53 (I-Field Impact Area) is located within the Boone Creek Investigation Area. The I-Field Impact Area is an active area of approximately 200 acres of graded bare soil sloping southeast to the Chesapeake Bay. Range testing has been conducted since pre-WWII and may have included chemical warfare materials. Most rounds are retrieved for examination after impact. A disposal area exists near the shoreline southeast of the impact area. Historically, some onsite test materials (spent munitions, munitions fragments, and miscellaneous fluid containers) may have been placed in the disposal area. A riparian zone exists between the bare soil impact area and the Chesapeake Bay shoreline. Part of the disposal site is being exposed by shoreline erosion.

Strategic Plan media (surface water, sediment, and surface soil) and groundwater sampling has been completed. RDX was detected in Phase I and II Strategic Plan DPT groundwater samples. Test dig activities conducted along the shoreline confirmed moderate waste disposal and delineated the extent of disposal.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
RDX, UXO

MEDIA OF CONCERN:
Groundwater, Soil, Surface Water, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199912	201009
RD	200809	201109
RA(C)	200909	201209

RC DATE: 201209

CLEANUP STRATEGY

Well installation and groundwater sampling activities currently underway to address the RDX contamination. Based on sampling results, RA may include waste and soil removal.

I-Field Smoke Pot Burial Site - Cluster 54
EAOE54

SITE DESCRIPTION

Cluster 54 (I-Field Smoke Pot Burial Site) is located within the Boone Creek Investigation Area though the exact location is unknown. It is believed to be located between Ricketts Point Road and the shoreline of the Chesapeake Bay in the southwestern portion of I-Field. The only known information regarding the site location is from a 1946 surveyors field book that indicates the site is located in southern I-Field. Smoke pots buried at the site were from the WWII era and are expected to have contained a HC smoke mixture comprised of hexachloroethane and its degradation byproducts. Several areas of disturbed ground are suspect sites in southern I-Field.

Test digs activities completed to determine the location of the site. After numerous attempts to locate site through geophysics, site recon, and test digs it is assumed that the site was removed prior to the IR program through routine range management practices or it is the same Smoke Pot Site as located in EAOE28.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN: Metals, Chlorinated Hydrocarbons, Explosives

MEDIA OF CONCERN: Soil, Groundwater, Surface Water, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199912	201009

RC DATE: 201009

CLEANUP STRATEGY

At this time, it is assumed that since the site has not been located, no RA will be performed, and regulatory site closure will be requested.

Old O-Field Groundwater Treatment Facility - OU1
EAOF01

SITE DESCRIPTION

A plume of contaminated groundwater extending from the source area (EAOF02) to Watson Creek (EAOF03) exists in a shallow water table and a shallow confined aquifer beneath Old O-Field. The source of contamination is a ~4.5 acre area used during the 1940s and 1950s for the disposal of chemical warfare agents, munitions, contaminated equipment, and miscellaneous wastes. Groundwater contaminants include chemical warfare agent degradation products; various metals; chlorinated aliphatic hydrocarbons; aromatic and nitroaromatic compounds.

An Interim ROD to address this contamination was signed in September 1991, in which the prescribed remedy was the installation of downgradient extraction wells to contain affected groundwater and the construction of an on-site Groundwater Treatment Facility (GWTF). The treatment train in the GWTF includes chemical precipitation for metals removal and ultraviolet oxidation followed by liquid phase carbon absorption for treatment of VOCs. The treated groundwater is discharged to the Gunpowder River. An Explanation of Significant Difference (ESD) was signed by EPA in March 2005. The ESD addresses non-pumping of the upper confined aquifer and details the modified organics treatment system; modifications to the frequency of toxicity testing, and effluent sample collection; and the "batch" treatment of liquid investigation-derived material (IDM) from other areas of APG.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN: VOCs, Chemical Warfare Agent Deg. Products, Metals, Hydrocarbons, Aromatics

MEDIA OF CONCERN: Groundwater

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	198510	200806
RD	199109	200812
RA(C)	199206	200912
RA(O)	199504	203709

RIP DATE: 200912
RC DATE: 203709

CLEANUP STRATEGY

Containment and treatment of contaminated groundwater will continue. A study to reduce operation cost is underway. Additional remedial technologies are being evaluated in FY06, prior to a Final ROD in FY08.

Based on the results of the *Report on Shoreline Damage Investigation for the Gunpowder Neck/ Edgewood Arsenal* (2004), a section of the Gunpowder River shoreline west of the GWTF was identified as a priority for stabilization. Funding for this action has been included in the cost shown.

Old O-Field Source Area - OU2
EAOF02

SITE DESCRIPTION

The Old O-Field Source Area is a 4.5-acre disposal site located adjacent to Watson Creek (EAOF03). The area was first used in the early 1940s for periodic disposal of waste materials from US Army operations. From 1942 to 1953, unlined and uncovered pits and trenches were dug and used for the disposal of bulk chemical agents, munitions, contaminated equipment, and miscellaneous hazardous waste. Disposed materials included lethal chemical agents, incapacitating agents, smoke incendiary materials, and explosive compounds.

An Interim ROD to address the potential for an accidental release of chemicals into the air was signed in September 1994. The components of the selected remedy included the construction of a permeable sand cover over the landfill designed to mitigate potential explosions and air releases of chemical agents. Construction of the cover was completed in September 1998. Studies to integrate the sand cover (EAOF02) and the GWTF (EAOF01) into one final remedy for the site have been completed. An Explanation of Significant Difference (ESD) for EAOF02 was signed by EPA on September 14, 2005. The ESD addresses non-utilization of the subsurface air monitoring system, non-utilization of the surface sprinklers for a treatability study and addition of a subsurface trickling system.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN: Chemical Agents, Munitions, Haz Waste

MEDIA OF CONCERN: Soil, Air

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	198912	200806
RD	199411	200812
RA(C)	199506	200912
RA(O)	199810	203709

RIP DATE: 200912
RC DATE: 203709

CLEANUP STRATEGY

The selected remedial action is an interim remedy, and will allow for continued investigation into a final ROD. Until that time, the risk of a release of hazardous air pollutants has been minimized by the sand cover placed over the disposal site. Additional remedial technologies are being evaluated in FY06, prior to a Final ROD in FY08.

Watson Creek Sediment & Surface Water - OU3 EAOF03

SITE DESCRIPTION

Watson Creek is a 60-acre estuarine water body located adjacent to the Old O-Field Source Area (EAOF02). Watson Creek receives both surface water runoff and groundwater discharge from O-Field (EAOF01, EAOF02 and EAOF04) and other adjacent range areas. Watson Creek discharges into the Gunpowder River, which in turn drains into the Chesapeake Bay.

Sampling performed during the RI detected metals and 4,4-DDE in the Watson Creek sediments at concentrations that pose potential adverse effects to benthic communities. Additionally, a potential risk to human health exists from the possible presence of ordnance in Watson Creek.

A ROD for Watson Creek was signed in September 1997. Limited action was selected as the most appropriate remedy, which involves the implementation of institutional controls (access and land-use restrictions), physical security measures, public education programs, long-term monitoring of site conditions, and 5-year reviews. Five years of long-term monitoring have been completed. Monitoring activities have included sediment sampling for chemical and bioassay analysis, fish tissue bioaccumulation studies and storm monitoring. In 1999, a bathymetry study was completed. In 2004, a comprehensive, enhanced monitoring was conducted.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
Metals

MEDIA OF CONCERN:
Surface Water, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	198510	199709
RA(C)	199709	199810
LTM	199810	203709

RC DATE: 199810

CLEANUP STRATEGY

Long-term monitoring will continue to be performed in accordance with the September 1997 ROD for OU3. Future monitoring efforts will be determined based on the annual report recommendations and evaluation and agreements between the Army and regulatory agencies. The sampling plan for LTM in FY07+ includes one round of sediment per year for chemical analysis.

NOTE: Costs for the Edgewood Area Five-Year Reviews (In FY07, FY12, FY17, FY22, FY27 and FY32) are also included under EAOF03.

New O-Field Groundwater and Source Area - OU4
EAOF04

SITE DESCRIPTION

New O-Field was used from 1950 to the late 1970s as a destruction, disposal and training area. Disposed materials are reported to include explosives, acids, research samples, mustard and white phosphorus-filled shells, other CWM and materials recovered during cleanup operations at Old O-Field. Burning in trenches was the primary disposal method. Nine covered former disposal/burn trenches exist at the site, two open burn trenches remain. A brush fire in April 1997 exposed previously unknown disposed materials including construction waste, UXO, burn pit push-out and potential CWM. The newly exposed materials more than doubled the size of the disposal area previously defined as New O-Field, from approximately 5 acres to upwards of 20 acres.

Contaminants identified during the RI include metals, solvents, PAHs, pesticides, dioxins/furans, CWM degradation products, and explosives in the soil, surface water, sediment and groundwater. A potential for human health risk exists, due to possible UXO/CWM on the surface of the marsh and woods and buried in the trenches. To mitigate the risk in the marsh and to reduce further degradation of the site groundwater, a non-time critical removal action was initiated in 2001 within the Pushout Area of the marsh. The removal action was completed in 2005.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN:
Metals, Solvents, PAHs, Pesticides, Dioxins/Furans, Explosives, CWM, CWM Deg. Products

MEDIA OF CONCERN:
Soil, Groundwater, Surface Water, Sediment, Air

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	198510	200809
IRA	200110	200504
RD	200810	200904
RA(C)	200905	201005
RA(O)	201006	204006

RIP DATE: 201006
RC DATE: 204006

Supplemental sampling in 2001 through 2004 has been conducted in support of the Groundwater Natural Attenuation Assessment and Ecological Risk Assessment. Based on the results of these assessments, a revised FS, Proposed Plan and Record of Decision will be developed for New O-Field in FY08 (already funded).

According to historical records, limited disposal may have occurred in the 1940s in an area west of Watson Creek Road, referred to as Other O-Field Areas. A field investigation, including geophysical surveys, direct push groundwater sampling, and surface soil/sediment was completed in FY04. A Remedial Investigation Addendum for Other O-Field Areas was drafted in December 2005. Arsenic was the only inorganic detected above its industrial soil screening level (at a maximum concentration of 5.6 mg/kg), but it was within the range of reference background levels. Due to the absence of risk, a Feasibility Study will not be required for this site. However, Other O-Field Areas will be included in the Proposed Plan and Record of Decision planned for New O-Field.

New O-Field Groundwater and Source Area - OU4
EAOF04

CLEANUP STRATEGY

NEW O-FIELD

Elevated concentrations of PAHs and metals may be removed from limited hot spot areas within New O-Field. The buried trenches, open trenches and wastes in the woods and marsh are also being considered for remediation by several methods in the FS Report. Concentrations of VOCs in groundwater at New O-Field appear to be declining with time. However, enhancement may be required to ensure that the parent compounds are broken down into innocuous byproducts (i.e. without amendments, the process may stop at vinyl chloride).

OTHER O-FIELD

Based on the results of the FY04 field investigation, no active remediation of Other O-Field Areas is anticipated.

Westwood Study Area
EAWW00

SITE DESCRIPTION

The Westwood Study Area (WSA) was used from 1918 to the 1970s for a variety of testing and training activities, material storage, manufacturing and munitions assembly operations, and waste disposal activities. During the WWII era, a portion of the WSA west of Reardon Inlet was an impact area for incendiary bomb testing and for the static testing of bombs and grenades. Additional work west of Reardon Inlet included mustard contamination/decontamination, demilitarization, sealed source radiological testing and training activities, and radiological waste processing operations. East of Reardon Inlet contained chlorine and gas mask manufacturing facilities, laboratories, radiological vulnerability test sites, and storage areas. Contaminants of concern within the WSA include VOCs, inorganic compounds, and radiological compounds.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN: VOCs, Inorganics, Radiological Compounds

MEDIA OF CONCERN: Soil, Groundwater, Surface Water, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199001	200509
LTM	200510	203710

RC DATE: 200509

CLEANUP STRATEGY

30 years of LTM costs for all of the Westwood Study Area will be reported under this site. The first four years of LTM will be captured under the existing PBC (AEDB-R Site PBC at APG). The remaining 26 years of LTM costs will be captured under this AEDB-R Site. The IAP includes costs for groundwater LTM at the Hog Point Site, sediment LTM at the WW-90 Fill Area, well abandonment, CERCLA Five-Year Remedy Reviews, and a Ramp-Down Strategy Report for LTM. LUCs and site close-out documentation costs are now funded under a WSA PBC awarded in April 2005.

It is possible that shoreline stabilization (near waste dump area), UXO and military-unique material along the boundary/shoreline and potential UXO off post (Gunpowder River) will need to be addressed (likely funded with non-IRP funds).

Mounds - Cluster 2
EAWW02-D

SITE DESCRIPTION

This site is made up of 2 mound areas, a drum dump area (0.1 acres) and a fill area (1.1 acres).

Two mound areas (designated A and B) (total of 0.25 acres), were identified during field reconnaissance in 1994. Knowledge of the historical usage of these areas is unknown. Mound A contains UXO fragments visible from the surface at various locations around the mound. A concrete block is located slightly west of Mound A and is believed to have been a static firing platform for munitions testing. Visual examinations of Mound B revealed trash, metal buckets, and paint pails near the mound.

FS geophysical investigation and site inspections in 2001 also identified 1 or 2 additional potential hot spots (subsurface) areas of waste material nearby.

The WW-90 Drum Dump and Fill Area are 0.2 acre and 1.2 acre sites discovered during a UXO Survey of the Installation boundary area. Visual inspection of the fill area revealed small amounts of demolition material on the surface. Magnetic results of the Drum Dump area indicated EM anomalies. Seismic refraction results indicated Drum Dump debris most likely represents discrete objects or a small group of objects buried at shallow depths. EM and magnetic surveys at the Fill Area delineated the extent of the suspected fill area. FS test dig investigations at the fill area indicate the waste material is a mix of household, military and construction debris; average depth of waste being 6-9 feet. FS test dig efforts at the drum dump concluded subsurface anomalies are extensive.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN: Inorganics, Pesticides, Metals

MEDIA OF CONCERN: Soil, Groundwater, Surface Water, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199001	200609
RD	200601	200611
RA(C)	200601	200709

RC DATE: 200709

The WW-90 Drum Dump is currently in the RD and RA(C) phases; contaminants of concern include inorganic compounds, metals and pesticides. The WW-90 Fill Area is in the RI/FS phase, with completion of a ROD expected by September 2006.

Mounds - Cluster 2
EAWW02-D

CLEANUP STRATEGY

Based on the Final ROD for the WW-90 Drum Dump, waste and contaminated soil removal (900 cy) is required. FS field investigations and conclusions of the Final FS Report indicated that a soil cover/cap and LTM at the WW-90 Fill Area may be needed. In addition, no active remediation at Mounds A and B is likely based on the FS field efforts.

Overall 2006 remedial design and remedial action costs decreased (greater then 10%) for EAWW02-D based on the award of the WSA PBC in April 2005. 30 years of LTM will be required for the WW-90 Fill Area. The first four years of LTM will be captured under the existing PBC (AEDB-R Site PBC at APG). The remaining 26 years of LTM costs will be captured under AEDB-R Site EAWW00. LTM is not required at the WW-90 Drum Dump.

Disposal/Burn Pits
EAWW02-E

SITE DESCRIPTION

The Grenade/Incendiary Disposal/Burn Pit Area was a former disposal area located just south of the Installation boundary. Three disposal locations (Pits A, B, C) were identified during a surface UXO survey of the area in 1996. Ordnance and explosive waste from historical testing and/or training were disposed at the three locations within the site by dumping along a shallow ravine. One site had been used as a burn pit, another site close by contained items which had been burned (possibly in the burn pit), and the third site contained surface dumped items which appeared to have functioned as designed and may have been recovered during range clearance. A Removal Action at Pits A, B and C, consisting of excavation and disposal, was initiated in February 2000 and completed in March 2000. Items recovered include fused but unfilled smoke grenades, pieces of incendiaries, non-energetic metallic items, and slag. All recovered items date from 1945 through 1952. No high explosive or chemical rounds were found.

STATUS

REGUALTORY DRIVER: CERCLA

RRSE: Medium

CONTAMINANTS OF CONCERN: Metals, Buried Debris, UXO

MEDIA OF CONCERN: Soil, Groundwater, Surface Water, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199001	200509
IRA	200002	200111
RD	200601	200604
RA(C)	200601	200709

RC DATE: 200709

In the spring of 2001, a fourth site (Pit D) was identified south of former Pit A, in the same ravine. A removal action, involving excavation and disposal was conducted in Nov 2001. Items recovered included grenade/incendiary components, molten slag and non-energetic metallic items.

FS geophysical investigations and site inspections in 2001 identified a small HC Grenade disposal site along the north bank of a drainage swale leading to Reardon Inlet. The surface material was removed and FS field investigations in 2004 identified an additional 270 sq. ft. area of waste and contaminated soil within the swale sediments, and bank.

This site is currently in the RD and RA(C) phases and the costs are captured under the PBC (site # PBC at APG).

CLEANUP STRATEGY

Based on the Final ROD for the HC Grenade Disposal Site, soil and waste removal (63cy) is needed. 2006 remedial design and remedial action costs decreased (greater than 10%) based on the award of the WSA PBC in April 2005. LTM is not required at the HC Grenade Disposal Site.

RAD Material Disposal Facility/ Demil Site
EAWW06

SITE DESCRIPTION

EAWW06 consists of the Westwood Radioactive Material Disposal Facility (WRMDF) and the Demilitarization Site. Beginning as early as 1957, the WRMDF was used for radioactive waste handling until the early 1960s. The WRMDF was additionally the site of radioactive research and development work for a short time during the early 1960s. Aboveground structures associated with the WRMDF were demolished during the 1970s. The Demilitarization Site was used for a short time during the late 1940s or early 1950s for demilitarization operations, primarily for defusing incendiary munitions.

In September 1998, a removal action was performed at this site to remove three contaminated underground wastewater discharge lines, a septic tank, and radioactive contaminated soil. Based on FS geophysical investigations and site inspections, the potential for additional disposal areas and utilities within the site still exists.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN: Radiologicals, Pesticides, Explosives, Metals

MEDIA OF CONCERN: Soil, Groundwater, Surface Water, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199001	200609
IRA	199708	199807
RD	200601	200609
RA(C)	200601	200709

RC DATE: 200709

In 2001, geophysical surveys of the site showed a small group of magnetic and electromagnetic anomalies within the western portion of the site (the Western Disposal Area). Surface material was removed in May 2002 and FS field investigations in 2004 encountered a mix of household and military waste buried within an 8400 sq. ft. area.

The Western Disposal Area portion of the site is currently in the RD and RA(C) phases covered under the PBC(site# PBC at APG). The remaining portion of the site, the WRMDF and Demilitarization Site, is currently in the RI/FS phase, with completion of a ROD expected by September 2006.

CLEANUP STRATEGY

Based on the Final ROD for the Western Disposal Site, soil and waste removal (890 cy) is needed. 2006 remedial design and remedial action costs decreased (greater than 10%) based on the award of the WSA PBC in April 2005. LTM is not required at the Western Disposal Site.

Based on the FS field investigations and conclusions of the Final FS Report, it is likely that no active remediation will be warranted for the WRMDF and Demilitarization Site.

Hog Point Site - Cluster 10
EAWW10-B

SITE DESCRIPTION

The Hog Point Site is a 1.4 acre area within a portion of the WSA that was used during the WWII-era for part of the Chemical Warfare School's gas obstacle course. During the 1960s and 1970s, the US Army Technical Escort Unit used portions of this area for mustard contamination/decontamination and demilitarization testing and training activities. Several structures built in the area no longer exist. Three former open storage areas also exist within the Hog Point Site. Several small berms and an area of subsidence were noted during field examinations of the open storage areas.

This site is currently in the RI/FS phase; contaminants of concern include VOCs, SVOCs, pesticides and inorganic compounds.

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN: Inorganics, VOCs, SVOCs, Pesticides

MEDIA OF CONCERN: Soil, Groundwater, Surface Water, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199001	200609
IRA	200410	200608
RD	200603	200611
RA(C)	200611	200709

RC DATE: 200709

CLEANUP STRATEGY

A removal action is planned in the summer of 2006 for one of the hot-spot metals contaminated areas adjacent to the eroding Gunpowder River shoreline.

30 years of LTM will be required for the Hog Point Site. The first four years of LTM will be captured under the existing PBC (AEDB-R Site PBC at APG). The remaining 26 years of LTM costs will be captured under AEDB-R Site EAWW00.

Gas Mask Factory/ WWI Chlorine Plant
EAWW14-C

SITE DESCRIPTION

The WWI Chlorine Plant was constructed and began production in 1918. The plant was in operation for only a few months and produced ~4,000 tons of chlorine. Following WWI, portions of the chlorine plant facilities were converted for other uses, including for use as a gas mask factory. The Gas Mask Factory occupied some of the former WWI Chlorine Plant facilities. The principal waste of mask and filter production results from the screening of charcoal and Whetlerite (activated charcoal impregnated with silver, copper, and chromium). Four potential pit-like features and a waste dump are associated with the Stokes Road East Site. Three of the pit-like features are filled in part with demolition debris. A removal action was conducted in 1996 to remove a large amount of surface material found within the waste dump. The Stokes Road West Site contains an area of subsidence and the remains of a former building structure, possibly the WWI Chlorine Plant electrical substation.

This site is currently in the RD and RA(C) phases with the costs being captured under the PBC (site# PBC at APG).

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS OF CONCERN: Metals, VOCs, SVOCs, Pesticides

MEDIA OF CONCERN: Soil, Groundwater, Surface Water, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199001	200509
IRA	199604	199605
RD	200601	200604
RA(C)	200601	200709

RC DATE: 200709

CLEANUP STRATEGY

Based on the Final ROD for the Gas Mask Factory and Stokes Road East Site, soil and waste removal (1,800 cy) is needed. 2006 remedial design and remedial action costs decreased (greater than 10%) for the site based on the award of the WSA PBC in April 2005. LTM is not required at this site.

WWI Chlorine Plant Dump - Cluster 21
EAWW21-E

SITE DESCRIPTION

The Brine Sludge Disposal Area lies south of 40th Street, within a wooded area just north of the West Branch of Canal Creek. At this location, a 2,076 square foot area of white crumbly material (suspected of being the remains of brine sludge from chlorine manufacture) lies on a slope down to the edge of the Canal Creek marsh. To the north of this site was the location of the former WWI Chlorine Plant salt storage and treatment facility (Building 706). This building was demolished n the late 1930s. Brine Sludge from the World War I Chlorine Plant were reportedly dumped or discharged to the marsh area to the southeast of the plant.

In April 1996, a removal action was conducted to remove surface material scattered throughout the site.

This site is currently in the RD and RA(C) phases with the costs being captured under the PBC (site# PBC at APG).

STATUS

REGULATORY DRIVER: CERCLA

RRSE: High

CONTAMINANTS: Inorganics

MEDIA OF CONCERN: Surface Soil, Sediment

Phases	Start	End
PA	197606	198912
SI	197606	198912
RI/FS	199001	200509
IRA	199507	199512
RD	200601	200604
RA(C)	200601	200709

RC DATE: 200709

CLEANUP STRATEGY

Based on the Final ROD for EAWW21-E, soil and waste removal (235 cy) is needed at the Brine Sludge Disposal Area. 2006 remedial design and remedial action costs decreased (greater than 10%) for the site based on the award of the WSA PBC in April 2005. LTM is not required at this site.

PBC AT APG

SITE DESCRIPTION

A PBC was awarded for IRP sites at APG:

- Edgewood Groundwater
- Graces Quarters
- Other Aberdeen Areas
- Westwood Study Area
- Bush River Study Area

STATUS

REGULATORY DRIVER: CERCLA

RRSE: Low

CONTAMINANTS OF CONCERN: VOCs, metals, pesticides, CWM, radiologicals (RAD), explosives, propellants

MEDIA OF CONCERN: Groundwater

Phases	Start	End
PA	200009	200109
SI	200109	200201
RI/FS	200202	200203
RD	200204	200407
RA(C)	200406	200907

IRP No Further Action Sites Summary

AEDB-R #	Site Title	Documentation/Reason for NFA	NFA Date
AAOA03	Other Aberdeen Areas – Drainage Ditch	Final ROD, No Further Action Required	200405
AAOA04	Other Aberdeen Areas – Spill Site Areas	Final ROD, No Further Action Required	200409
AAOA05	Infections Waste Incinerator	Not Eligible for ER,A/BRAC Funding	199009
AAOA06	German Ammunition Train Explosion Area	Study Completed, No Cleanup Required.	200209
AAOA07	Other Aberdeen Areas – Storage Areas	All required cleanups completed.	200405
AAOA10	Other Aberdeen Areas – Washracks	Final ROD	200405
AAOA11	Other Aberdeen Areas – Waste Treatment Plant	Not Eligible for ER,A/BRAC Funding	200009
AAOA13	CSTA Buried Drum Site – Bldg 896	Not Eligible for ER,A/BRAC Funding	200009
AAOA14	WP Munitions Burial Area	Not Eligible for ER,A/BRAC Funding	20009
AAWB03	Fire Training Area	Not Eligible for ER,A/BRAC Funding	199506
AAWP01	WP Underwater Munitions Burial	Final ROD, Study Completed, No Cleanup Required	199109
APGSC00	Shoreline Cleanup	No Further Action Required	199709
EABR03-C	Surficial Aquifer – Cluster 3	Study Completed, No Cleanup Required	199902
EABR07-A	Boat Club Fill Site (4) – Cluster 7	Study Completed, No Cleanup Required	200209
EABR07-B	Bio-Sensor Facility – Cluster 7	Study Completed, No Cleanup Required	200209
EABR11-D	Building 45-A Ammo Renovation Facility – Cluster 11	Study Completed, No Cleanup Required	200009
EABR11-E	Casy Incinerator – Cluster 11	Final ROD, No Further Action Required	200009
EABR11-G	Underground Storage Tank	Study Completed, No Cleanup Required	199809
EABR11-H	Adamsite Storage Pit – Cluster 11	All Required Cleanups Completed	199809
EABR15-C	Ton Container Storage – Cluster 15	Study Completed, No Cleanup Required	200009
EABR18-A	Tapler Point Dredge Material Site – Cluster 18	Not Eligible for ER,A/BRAC Funding	200009
EABR18-B	Chemical Munitions Burial Site (4) – Cluster 18	Final ROD, No Further Action Required	200009

AEDB-R #	Site Title	Documentation/Reason for NFA	NFA Date
EABR18-C	Igloo Storage Areas – Cluster 18	Study Completed, No Cleanup Required	200009
EABR18-D	A-Field Test Site (2) – Cluster 18	Study Completed, No Cleanup Required	200009
EABR35-A	Maintenance Yard – Cluster 35	Study Completed, No Cleanup Required	200209
EABR35-B	Building E2144/2148/2150 – Cluster 35	Study Completed, No Cleanup Required	200209
EABR36-A	Warehouse Storage Areas – Cluster 36	Study Completed, No Cleanup Required	200209
EABR36-B	Building 846 Waste Disposal Site – Cluster 36	Study Completed, No Cleanup Required	200209
EACC1L-A	Building 503 Smoke Mixture Burning Sites – Cluster 1L	All Required Cleanups Completed	199907
EACC3M-A	Wastewater Treatment Area – Cluster 3M	Final ROD, No Further Action Required	198912
EACC3M-B	B-Field Decon-Detox Incinerator – Cluster 3M	Not Eligible for ER,A/BRAC Funding	200009
EACC6	HMF/UST Removal/Closure	All Required Cleanups Completed	200212
EACC7	Unexploded Ordnance/CWM	Not Eligible for ER,A/BRAC Funding	198912
EACI01-A	Bengies Point Road Dump – Cluster 1	Final ROD , All Required Cleanups Completed	199912
EACI01-B	Bengies Point Road Ram House – Cluster 1	Final ROD, No Further Action Required	199709
EACI01-C	Old Carroll Island Road Dump – Cluster 1	Final ROD, All Required Cleanups Completed	199912
EACI01-D	AOC Associated with Site 10 – Cluster 1	Final ROD, No Further Action Required	199709
EACI02-A	Service Area – Cluster 2	Final ROD, No Further Action Required	199912
EACI02-B	Dredge Spoil Site – Cluster 2	Final ROD, No Further Action Required	199709
EACI02-C	Woods West of Service Area – AOC Associated with Site 13	Final ROD, All Required Cleanups Completed	199912
EACI03	Edgewood Proving Ground Dump – Cluster 3	Final ROD, No Further Action Required	199912
EACI04-A	Aerial Spray Grid – Cluster 4	Final ROD, No Further Action Required	199709
EACI04-B	Decontamination Pits – Cluster 4	Final ROD, All Required Cleanups Completed	199912
EACI04-C	Woods West of Aerial Spray Grid	Final ROD, All Required Cleanups Completed	199912

AEDB-R #	Site Title	Documentation/Reason for NFA	NFA Date
EACI04-D	BZ Test Burn Pits – Cluster 4	Final ROD, All Required Cleanups Completed	199912
EACI05-A	Test Grid 1 – Cluster 5	Final ROD, No Further Action Required	199709
EACI05-B	Magazine Area – Cluster 5	Final ROD, No Further Action Required	199709
EACI05-C	Animal Shelter – Cluster 5	Final ROD, No Further Action Required	199709
EACI05-D	Animal Shelter Woods East of Test Grid 1 – Cluster 5	Final ROD, No Further Action Required	199912
EACI05-E	Pushback Mounds North and East of Test Grid 1 – Cluster 5	Final ROD, No Further Action Required	199912
EACI06-A	Wind Tunnel – Cluster 6	Final ROD, No Further Action Required	199709
EACI06-B	Woods South of Wind Tunnel Road	Final ROD, No Further Action Required	199912
EACI06-C	UST at Wind Tunnel – Cluster 6	Final ROD, No Further Action Required	199709
EACI06-D	CS Test Area – Cluster 6	Final ROD, No Further Action Required	199709
EACI06-E	CS Test Area Mounds – AOC Associated with Site 12 – Cluster 6	Final ROD, No Further Action Required	199709
EACI07-A	VX Test Area – Cluster 7	Final ROD, No Further Action Required	199709
EACI07-B	Test Grid 2 – Cluster 7	Final ROD, No Further Action Required	199709
EACI07-C	HD Test Area and Areas East – Cluster 7	Final ROD, No Further Action Required	199709
EACI08	Disposal Site – Cluster 8	Final ROD, No Further Action Required	200006
EAGQ01-A	Disposal Area – Cluster 1	Final ROD, No Further Action Required	199709
EAGQ01-B	Graces Quarters Dump – Cluster 1	Final ROD, No Further Action Required	199709
EAQQ01-C	Bunkers Site – Cluster 1	Final ROD, No Further Action Required	199709
EAGQ01-D	FEMA Service Area – Cluster 1	Final ROD, No Further Action Required	199709
EAGQ01-E	FEMA Bunker – Cluster 1	Final ROD, No Further Action Required	199709
EAGQ01-F	AOC Associated with Site 4 – Cluster 1	Final ROD, No Further Action Required	199709
EAGQ01-G	HD Test Annuli – Cluster 1	Final ROD, No Further Action Required	199709

AEDB-R #	Site Title	Documentation/Reason for NFA	NFA Date
EAGQ01-H	Test Huts – Cluster 1	Final ROD, No Further Action Required	199709
EAGQ01-I	Secondary Test Area – Cluster 1	Final ROD, No Further Action Required	199709
EAGQ02-A	Northern Perimeter Dump – Cluster 2	Final ROD, No Further Action Required	199709
EAGQ02-B	South and Southwest Perimeter Dumps – Cluster 2	Final ROD, No Further Action Required	199709
EAGQ02-C	Primary Test Area – Cluster 2	Final ROD, No Further Action Required	199709
EAGQ03-A	Service Area – Cluster 3	Final ROD, No Further Action Required	199709
EAGQ03-B	Dugway Proving Ground Test Site – Cluster 3	Final ROD, No Further Action Required	199709
EAGQ03-C	AOC Associated with Site 8 – Cluster 3	Final ROD, No Further Action Required	199709
EAGQ03-D	Disposal Mounds at Dugway Site – Cluster 3	Final ROD, No Further Action Required	199709
EAGQ03-E	USTs at Service Areas – Cluster 3	Final ROD, No Further Action Required	199709
EAJF02	Prototype Building	Final ROD, Study Completed, No Cleanup Required	200103
EAJF03	CS/CN Area (Riot Control Burning Pits)	Final ROD, Study Completed, No Cleanup Required	200103
EAJF04	Robins Point Demolition Ground	Active RCRA Unit	200209
EAJF05-A	TPB – Southern Main Pits Overall	Final ROD, No Further Funding Required	200111
EAJF05-B	TBP – Surficial Aquifer	Final ROD, No Further Funding Required	200211
EAJF06	South Beach Demolition Ground	Final ROD, Study Completed, No Cleanup Required	200103
EAJF07	South Beach Trench	Final ROD, Study Completed, No Cleanup Required	200103
EAJF08	X1 Ruins Site Southwest of Intersection	Final ROD, Study Completed, No Cleanup Required	200103
EAJF09	Drainage Grid – Area A	Final ROD, Study Completed, No Cleanup Required	200103
EAJF10	Ford's Point Firing Range – Area B	Final ROD, Study Completed, No Cleanup Required	200103
EAJF11	Ruins Site Northeast of Intersection – Area C	Final ROD, Study Completed, No Cleanup Required	200103
EAJF12	Ruins Site Across Road from WPP (RNS Site)	Final ROD, Study Completed, No Cleanup Required	200103

AEDB-R #	Site Title	Documentation/Reason for NFA	NFA Date
EAJF13	Swamp 400' East of Ruins Site – Area D	Final ROD, Study Completed, No Cleanup Required	200103
EAJF14	Robins Point Tower Site	Final ROD, Study Completed, No Cleanup Required	200103
EALC00	Lauderick Creek	All Required Cleanups Completed	200405
EALC05-A	Nike East Woods Site 6 – Cluster 5	Final ROD, Study Completed, No Cleanup Required	199911
EALC05-B	Concrete Slab Test Area – Cluster 5	Final ROD, No Further Action Required	199911
EALC05-D	Concrete Slab Dump Area 2 – Cluster 5	Final ROD, No Further Action Required	200009
EALC09-A	Nike Control Dry Wells (4) – Cluster 9	Final ROD, Study Completed, No Cleanup Required	199911
EALC09-B	Nike Control Septic Tanks/Sand Filter – Cluster 9	Final ROD, No Further Action Required	200011
EALC09-C	Nike Control Underground Fuel Tank (Excavated) – Cluster 9	Study Completed, No Cleanup Required	199911
EALC09-D	Nike East Woods Site 1 – Cluster 9	Final ROD, Study Completed, No Cleanup Required	199911
EALC13-A	School Field #1 Test Areas (2) – Cluster 13	All Required Cleanups Completed	199909
EALC13-B	School Field #2 Dumps – Cluster 13	All Required Cleanups Completed	199909
EALC13-C	Underground Storage Tanks – Cluster 13	All Required Cleanups Completed	199909
EALC17-A	East Woods Disposal Area – Cluster 17	Final ROD, Study Completed, No Cleanup Required	199911
EALC20	School Field #3 Test Area – Cluster 20	Final ROD, Study Completed, No Cleanup Required	199911
EALC32	Gum Point Dredge Spoils – Cluster 32	Final ROD, No Further Action Required	199911
EALC33	Monks Creek Farm Site – Cluster 33	Final ROD, Study Completed, No Cleanup Required	199911
EANS01-B	Confined Groundwater	Study Completed, No Cleanup Required	199609
EANS01-C	Launch Area Septic System	Final ROD, All Required Cleanups Completed	199711
EANS01-F	Underground Fuel Tank (E6871)	Final ROD, Study Completed, No Cleanup Required	199609
EANS01-G	Underground Fuel Tanks Barracks Area	Study Completed, No Cleanup Required	199609
EANS01-H	Nike Barracks Septic System	Study Completed, No Cleanup Required	199609

AEDB-R #	Site Title	Documentation/Reason for NFA	NFA Date
EANS01-I	Launch Surface Drainage System	Study Completed, No Cleanup Required	199609
EANS01-J	Berms and Disturbed Soil Areas	Study Completed, No Cleanup Required	199609
EANS01-K	School Field IV	All Required Cleanups Completed	199609
EAPP00	Building E5625 – Pilot Plant	Not Eligible for ER,A/BRAC Funding	199610
EAWW02-A	Material Storage/ RAD Test Site	Final ROD, Study Completed, No Cleanup Required	200509
EAWW02-B	Ground Scar Area – Cluster 2	Final ROD, Study Completed, No Cleanup Required	200509
EAWW02-C	Open Gravel Depression – Cluster 2	Final ROD, Study Completed, No Cleanup Required	200509
EAWW10-A	Roads End Disposal Site – Cluster 10	Final ROD, Study Completed, No Cleanup Required	200509
EAWW10-C	Piney Point Site – Cluster 10	Final ROD, Study Completed, No Cleanup Required	200509
EAWW10-D	Linear Features Site – Cluster 10	Final ROD, Study Completed, No Cleanup Required	200509
EAWW10-E	Impoundment Site – Cluster 10	Final ROD, Study Completed, No Cleanup Required	200509
EAWW10-F	Wetland Site – Cluster 10	Final ROD, Study Completed, No Cleanup Required	200509
EAWW14-A	Bldg E5770 Area/Magnolia Rd RAD Test	Final ROD, Study Completed, No Cleanup Required	200509
EAWW14-B	Bldg E5695 Area – Cluster 14	Final ROD, Study Completed, No Cleanup Required	200509
EAWW21-A	San Domingo Ordnance Burial Pit – Cluster 21	Final ROD, Study Completed, No Cleanup Required	200509
EAWW21-B	San Domingo Munitions Plan – Cluster 21	Final ROD, Study Completed, No Cleanup Required	200509
EAWW21-C	Bldg E5664 (Ground Scar Area) – Cluster 21	Final ROD, Study Completed, No Cleanup Required	200509
EAWW21-D	Bldg E5830 Landfill – Cluster 21	Final ROD, Study Completed, No Cleanup Required	200509

IRP Schedule

Initiation of IRP: 1976

Past Phase Completion Milestones

IRP PA/SI Initiation		Dec 1976
PA, Installation-Wide Completion		Jan 1983
RFI (HGA)		
·	AAWB02 (PAALF)	May 1988
·	EAOF00 (O-Field)	May 1989
·	EANS00 (Cluster 1-Nike Site)	Feb 1990
·	AAML00 (Michaelsville Landfill)	May 1990
·	EACI00 (Carroll Island)	May 1991
·	EAGQ00 (Graces Quarters)	May 1991
·	AAWB03 (Western Boundary-FTA)	Dec 1992
RFA - Edgewood Area		Nov 1989
RFA - Aberdeen Area		Sep 1990
RI	AAWP01 (WPUMBA)	Jan 1990
ROD	AAWP01 (WPUMBA), No Further Remedial Action Planned	Sep 1991
ROD	EAOF01 (Old O-Field OU1), GW Extraction & Treatment System (GWTS)	Sep 1991
ROD	AAML01 (MLF OU1), Installation of Landfill Cap & Cover System	Jun 1992
RA	AAML01 (MLF OU1), Cap Installation	Aug 1994
ROD	EAOF02 (Old O-Field OU2), Permeable Infiltration Unit (PIU) Installation	Oct 1994
RD	EAOF01 (Old O-Field OU1) Remedial Design of GWTS	Jan 1995
RD	EAOF02 (Old O-Field OU2) Remedial Design of PIU	Feb 1995
RA	EAOF01 (Old O-Field OU1) Remedial Action Construction of GWTS	Apr 1995
RI/FS	EANS00 (Cluster 1-Nike Site EANS01-A,B,C,D,E,F,G,H,I,J,K)	Jun 1995
ROD	EACC1H-E (Bldg. 103 Dump) Construct Cap	Sep 1995
ROD	EACC1L-A (Bldg. 503 Burn Sites Soil OU) Excavate Contaminated Soil	Apr 1996
ROD	EACI01-A,C; EACI02-A,C; EACI03; EACI04-B,D; EACI05-D,E; EACI06-E; EACI08,(Carroll Island OUA - Disposal Sites) Excavate Disposal Sites	Sep 1996
ROD	EAJF05 & EAJF05-A (J-Field Toxic Burning Pits) Excavate Cont. Soil	Sep 1996
ROD	EANS01-A,B,C,D,E,F,G,H,I,J,K (Cluster 1, Former Nike Missile Site) Landfill Cap, Sewer System Closure, GW Extraction and Trtmt System	Sep 1996
RD	EACC1H-E (Bldg. 103 Dump) Complete Remedial Design of Cap	Sep 1996
RD	EACC1L-A (Bldg. 503 Burn Sites Soil OU) Complete Remedial Design to Excavate Contaminated Soil	Sep 1996
RI	AAML02 (Groundwater OU2)	Jun 1997
RD	EANS01-C (Cluster 1 - Nike Site) Abandon Sanitary Sewer System	Jun 1997
RD	EACI01-A,C;02-A,C;04-B,C,D;05-D,E;06-B;08 (Disposal Sites OUA) Excavate Sites	Sep 1997
ROD	AAML02 (Groundwater OU2) No Further Action w/ LTM	Sep 1997
ROD	EAOF03 (Sediment and Surface Water OU3) Restricted Access w/LTM	Sep 1997
ROD	EACC3N (Beach Point Groundwater OU) No Further Action w/ LTM	Sep 1997
RI	EACI00 (Carroll Island Overall)	Oct 1997
RA	EANS01-C (Cluster 1 - Nike Site) Abandon Sanitary Sewer System	Nov 1997
RD	EANS01-D (Cluster1 - Nike Site) Install Cap over Southwest Landfill	Nov 1997
RD	EAJF05, 05-A (Toxic Burning Pits) Excavate Contaminated Soil	Apr 1998
RI	EAJF00 (J-Field Overall)	Jun 1998

RI	EABR03-A (Cluster 3, Old Bush River Road Dump)	Aug 1998
RA	EANS01-D (Cluster 1, Southwest Landfill Site) Install Cap over Landfill	Aug 1998
IRA	EAOF02 (Old O-Field Source OU2) Install Permeable Infiltration Unit over Old O-Field Landfill	Aug 1998
RD	EAJF05, 05-A (Toxic Burning Pits) Shoreline Stabilization	Sept 1998
ROD	EABR03-A (Cluster 3, Old Bush River Road Dump) Covering over Dump	Feb 1999
ROD	EACC4A (Canal Creek Groundwater Operable Unit-Remedial Action)	Feb 1999
IRA	EAJF05, 05-A (Toxic Burning Pits) Shoreline Stabilization	Feb 1999
RD	EANS01-A (Groundwater) Treatment System Design	Feb 1999
IRA	EABR15A (Kings Creek Area) Contaminated Soil Removal	May 1999
IRA	EACI02-A (Service Area Septic System/ Sump) Abandon-in-place	July 1999
RD	EABR03-A (Old Bush River Road Dump) Cover Design	Dec 1999
RA	EACI01-A,C; 02-A,C; 03; 04-B,C,D; 05-D,E; 06-B; 08 Excavation	Dec 1999
IRA	EAWW02-E Disposal/Burn Pits - Removal	Mar 2000
RI/FS	AAWB01 Western Boundary Area Groundwater - OU1	Jun 2000
RA(C)	EACI08 Lower Island Disposal Site - Cluster 8 - Waste Removal - Drums, Tanks, Bulk Containers	Jun 2000
RI/FS	EACC4A Canal Creek Aquifer - Cluster 4A	Jul 2000
	RI/FS AAOA11 Other Aberdeen Areas - Waste Treatment Plant	Sep 2000
RI/FS	AAOA13 CSTA Buried Drum Site, Bldg 896	Sep 2000
RI/FS	AAOA14 WP Munitions Burial Area	Sep 2000
RI/FS	EABR11-D Bldg 45-A Ammo Renovation Facility - Cluster 11	Sep 2000
RI/FS	EABR11-E CASY Incinerator - Cluster 11	Sep 2000
RI/FS	EABR15-C Ton Container Storage - Cluster 15	Sep 2000
RI/FS	EABR18-A Tapler Pit Dredge Material Site - Cluster 18	Sep 2000
RI/FS	EABR18-B Chemical Munitions Burial Site (4) - Cluster 18	Sep 2000
RI/FS	EABR18-C Igloo Storage Areas - Cluster 18	Sep 2000
RI/FS	EABR18-D A-Field Test Sites (2) - Cluster 18	Sep 2000
RI/FS	EALC05-C Concrete Slab Dump Area 1 - Cluster 5	Sep 2000
RI/FS	EALC05-D Concrete Slab Dump Area 2 - Cluster 5	Sep 2000
RA(C)	EABR03-A Old Bush River Road Dump - Cluster 3, Capping	Nov 2000
RA(C)	EALC09-B Nike Control Septic Tanks/Sand Filter - Cluster 9, Removal	Nov 2000
RI/FS	EAJF00 J-Field Study Area	Mar 2001
RI/FS	EAJF02 Prototype Building	Mar 2001
RI/FS	EAJF03 CS/CN Area (Riot Control Burning Pits)	Mar 2001
RI/FS	EAJF05-B TBP - Surficial Aquifer	Mar 2001
RI/FS	EAJF06 South Beach Demolition Ground	Mar 2001
RI/FS	EAJF07 South Beach Trench	Mar 2001
RI/FS	EAJF08 X1 Ruins Site Southwest of Intersection	Mar 2001
RI/FS	EAJF09 Drainage Grid - Area A	Mar 2001
RI/FS	EAJF10 Ford's Point Firing Range - Area B	Mar 2001
RI/FS	EAJF11 Ruins Site Northeast of Intersection - Area C	Mar 2001
RI/FS	EAJF12 Ruins Site Across Road from WWP (RNS Site)	Mar 2001
RI/FS	EAJF13 Swamp 400'E of Ruins Site - Area D	Mar 2001
RI/FS	EAJF14 Robins Point Tower Site	Mar 2001
RD	EAJF05 Toxic Burning Pit	Apr 2001

RD	EAJF05-A TBP - Southern Main Pits Overall	Apr 2001
IRA	EABR03-B Transformer Storage - Cluster 3, Removal	Sep 2001
RD	EAJF00 J-Field Study Area	Sep 2001
RD	EAJF05-B TBP - Surficial Aquifer	Sep 2001
RD	AAWB01 Western Boundary Area Groundwater - OU1	Nov 2001
RA(C)	EAJF05 Toxic Burning Pit, Capping	Nov 2001
RA(C)	EAJF05-A TBP - Southern Main Pits Overall, Capping	Nov 2001
IRA	EAWW02-E Disposal/Burn Pits, Removal	Nov 2001
RD	EACI00 Carroll Island Study Area	Jun 2002
RD	EAGQ00 Graces Quarters Study Area	Jun 2002
RD	EALC05-C Concrete Slab Dump Area 1 - Cluster 5	Jul 2002
IRA	EAOE04 D-Field Aerial Spray Grid - Cluster 4, Removal	Jul 2002
RD	EACC4A Canal Creek Aquifer - Cluster 4A	Aug 2002
RI/FS	AAOA06 German Ammunition Train Explosion Area	Sep 2002
RI/FS	EABR03-B Transformer Storage - Cluster 3	Sep 2002
RI/FS	EABR07-A Boat Club Fill Site (4) - Cluster 7	Sep 2002
RI/FS	EABR07-B Bio-Sensor Facility - Cluster 7	Sep 2002
RI/FS	EABR35-A Maintenance Yard - Cluster 35	Sep 2002
RI/FS	EABR35-B Bldg E2144/2148/2150 - Cluster 35	Sep 2002
RI/FS	EABR36-A Warehouse Storage Areas - Cluster 36	Sep 2002
RI/FS	EABR36-B Bldg 846 Waste Disposal Site - Cluster 36	Sep 2002
RA(C)	EAGQ00 Graces Quarters Study Area	Sep 2002
RI/FS	EAJF04 Robins Point Demolition Ground	Sep 2002
RA(C)	EAJF05-B TBP - Surficial Aquifer, Capping	Nov 2002
IRA	EACC6 HMF/UST Removal/Closure, Removal	Dec 2002
RA(C)	EACC6 HMF/UST Removal/Closure, Waste Removal	Dec 2002
RI/FS	EAGQ02-D Surficial Aquifer - Cluster 2	Dec 2002
RA(C)	EACC4A Canal Creek Aquifer - Cluster 4A, GW Treatment	Apr 2003
RA(C)	AAWB01 Western Boundary Area Groundwater-OU1, Carbon Adsorption	Sep 2003
IRA	EALC00 Lauderick Creek, Removal	Dec 2003
RA(C)	EAJF00 J-Field Study Area	Apr 2004
RI/FS	AAOA03 Other Aberdeen Areas - Drainage Ditches	May 2004
RI/FS	AAOA07 Other Aberdeen Areas - Storage Areas	May 2004
RI/FS	AAOA10 Other Aberdeen Areas - Washracks	May 2004
RA(C)	EALC00 Lauderick Creek, Removal	May 2004
RI/FS	AAOA04 Other Aberdeen Areas - Spill Site Areas	Sep 2004
RA(C)	EACI00 Carroll Island Study Area, Institutional Controls	Sep 2004
RA(C)	EALC05-C Concrete Slab Dump Area 1, Removal - Solids (Non-Soils)	Sep 2004
IRA	EAOE04 D-Field Aerial Spray Grid - Cluster 4, Removal	Sep 2004
IRA	EAOF04 New O-Field Groundwater Source Area – OU4	Apr 2005
IRA	EABR11-I Radioactive Material Disposal Facility	Jun 2005
RI/FS	AAOA01 Other Aberdeen Areas – Landfills	Sep 2005
RI/FS	AAOA02 Other Aberdeen Areas – Surface Disposal Areas	Sep 2005
RI/FS	EACC1A-A Railroad Yard - Cluster 1	Sep 2005
RI/FS	EACC1A-B G-Street Salvage Yard - Cluster 1A	Sep 2005
RI/FS	EACClF-A Bldg E5604 Area Cluster lF	Sep 2005
RI/FS	ACC1G-B Bldg. E5188 WWII Mtd Filling Point – Cluster 1G	Sep 2005

RI/FS	EACC1H-C Bldg. E5483 Protect Cloth Ldy – Cluster 1H	Sep 2005
RI/FS	EACC1I-B Bldg. 113 Gas Inst. Chamber – Cluster 1I	Sep 2005
RI/FS	EACC2A Old Hosp. & Admn. Area – Cluster 2A	Sep 2005
RI/FS	EACC2B Bldg. E5023 WWI WP Filing Point – Cluster 2B	Sep 2005
RI/FS	EACC2F Bldg 99 (E5032) Experimental Filling Plant - Cluster 2F	Sep 2005
RI/FS	EACC2G Bldg. E5103 Photo Lab – Cluster 2G	Sep 2005
RI/FS	EACC2H-A Bldg. 501 Filling Point/E5100 Lab – Cluster 2H	Sep 2005
RI/FS	EACC2I-B Old Shop & Motorpool Area – Cluster 2I	Sep 2005
RI/FS	EACC3B Bldg. E2100 Laboratory – Cluster 3B	Sep 2005
RI/FS	EACC3D Bldg. E3160 Complex – Cluster 3D	Sep 2005
RI/FS	EACC3H E3560 Test Chamber Complex – Cluster 3H	Sep 2005
RI/FS	EACC3J Bldg. E3580 Pyrotech Ldg Facility – Cluster 3J	Sep 2005
RI/FS	EAWW00 Westwood Area	Sep 2005
RI/FS	EAWW02-A Debris Landfill/Material Storage Site	Sep 2005
RI/FS	EAWW02-B Ground Scar Area – Cluster 2	Sep 2005
RI/FS	EAWW02-C Open Gravel Depression – Cluster 2	Sep 2005
RI/FS	EAWW02-E Disposal/Burn Pits	Sep 2005
RI/FS	EAWW10-A Roads End Disposal Site – Cluster 10	Sep 2005
RI/FS	EAWW10-C Piney Point Site – Cluster 10	Sep 2005
RI/FS	EAWW10-D Linear Features Site – Cluster 10	Sep 2005
RI/FS	EAWW10-E Impoundment Site – Cluster 10	Sep 2005
RI/FS	EAWW10-F Wetland Site – Cluster 10	Sep 2005
RI/FS	EAWW14-A Bldg E-5770 Area/Magnolia Rd. Rad. Test	Sep 2005
RI/FS	EAWW14-B Building E-5695 Area – Cluster 14	Sep 2005
RI/FS	EAWW14-C Gas Mask Factory/WWI Chlorine Plant	Sep 2005
RI/FS	EAWW21-A San Domingo Ordnance Burial Pit – Cluster 21	Sep 2005
RI/FS	EAWW21-B San Domingo Munitions Plant - Cluster 21	Sep 2005
RI/FS	EAWW21-C Bldg E5664 – Cluster 21	Sep 2005
RI/FS	EAWW21-D Building E5830 Landfill – Cluster 21	Sep 2005
RI/FS	EAWW21-E WWI Chlorine Plant Dump - Cluster 21	Sep 2005

Projected Record of Decision (ROD)/Decision Document (DD) Approval Dates: 2008

Projected Construction Completion Date of IRP: 201209

Projected Date for Removal from NPL: 204009

Schedule for Next Five-Year Review: 2007

Estimated Completion Date of IRP (including LTM Phase): 204009

Aberdeen Proving Ground IRP Schedule

(based on current funding constraints)

AEDB-R#	PHASE	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+
AAML01	LTM									203709
AAML02	LTM									202709
Michaelsville Landfill										
AAWB01	RA(O)									203709
AAWB04	RI/FS									
	RD									
	RA(C)									
Western Boundary										
AAOA01	RA(C)									
	LTM									201809
AAOA08	RA(C)									
	RA(O)									203309
Other Aberdeen										
EAOE04	RI/FS									
	RD									
	RA(C)									
EAOE08	RI/FS									
	RD									
	RA(C)									
EAOE12	RI/FS									
	RD									
	RA(C)									
EAOE16	RI/FS									
	RD									
	RA(C)									
	RA(O)									203909
EAOE19	RI/FS									
	LTM									203709
EAOE22	RI/FS									
	RD									
	RA(C)									
	LTM									202109
EAOE23	RI/FS									
	RD									
	RA(C)									

AEDB-R#	PHASE	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+
EAOE24	RI/FS									
	RD									
	RA(C)									
EAOE26	RI/FS									
	RD									
	RA(C)									
	LTM									202109
EAOE27	RI/FS									
	RD									
	RA(C)									
EAOE28	RI/FS									
	RD									
	RA(C)									
EAOE29	RI/FS									
	RD									
	RA(C)									
	RA(O)									202109
	LTM									204109
EAOE30	RI/FS									
EAOE31	RI/FS									
EAOE37	RI/FS									
	RD									
	RA(C)									
EAOE38	RI/FS									
EAOE39	RI/FS									
EAOE41	RI/FS									
	LTM									201909
EAOE42	RI/FS									
	RD									
	RA(C)									
EAOE43	RI/FS									
EAOE44	RI/FS									
EAOE45	RI/FS									
EAOE46	RI/FS									
EAOE49	RI/FS									
EAOE50	RI/FS									
EAOE51	RI/FS									
	RD									
	RA(C)									

AEDB-R#	PHASE	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+
EAOE52	RI/FS									
	RD									
	RA									
EAOE53	RI/FS									
	RD									
	RA									
EAOE54	RI/FS									
Other Edgewood Areas										
EABR03-A	LTM									203709
EABR03-B	LTM									203703
EABR11-C	LTM									203009
EABR11-F	LTM									204109
EABR15-A	LTM									203909
EABR15-B	LTM									203909
EABR15-D	RA(O)									204009
EABR18-E	LTM									203809
EABR18-F	RA(O)									204009
Bush River										
EALC05-C	LTM									
EALC09-F	RA(O)									204009
EALC13-D	RA(O)									203909
Lauderick Creek										
EANS01-A	RA(O)									201410
	LTM									203709
EANS01-D	LTM									203709
Nike Site										
EACI00	LTM									203709
Carroll Island										
EAGQ00	LTM									203709

AEDB-R#	PHASE	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+
EAGQ02-D	RA(O)									203409
Graces Quarter										
EAJF00	LTM									203709
EAJF01	RD									
	RA(C)									
	RA(O)									203709
J-Field										
EACC1A-B	RD									
	RA(C)									
EACC1E	RD									
	RA(C)									
EACC1H-A	RD									
	RA(C)									
EACC1H-B	RD									
	RA(C)									
EACC1H-E	LTM									203709
EACC1H-F	RD									
	RA(C)									
EACC1H-G	RD									
	RA(C)									
EACC1I-A	RD									
	RA(C)									
EACC1L-B	RD									
	RA(C)									
EACC2D	RD									
	RA(C)									
EACC2E	RD									
	RA(C)									
EACC2H-B	RD									
	RA(C)									
EACC2H-C	RD									
	RA(C)									
EACC3A	RD									
	RA									
EACC3C	RD									
	RA(C)									
EACC3G	RD									
	RA(C)									

AEDB-R#	PHASE	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+
EACC3K-A	RD									
	RA(C)									
EACC3L	RD									
	RA(C)									
	LTM									203909
EACC3N	LTM									
EACC4A	RA(O)									203704
EACC4A-B	RD									
	RA(C)									
	RA(O)									201410
EACC5A	RD									
	RA(C)									
EACC5B	RD									
	RA(C)									
Canal Creek										
EAOF01	RD									
	RA(C)									
	RA(O)									203709
EAOF02	RD									
	RA(C)									
	RA(O)									203709
EAOF03	LTM									203709
EAOF04	RD									
	RA(C)									
	RA(O)									204006
O-Field										
EAWW00	LTM									203710
EAWW10-B	RA(C)									
West Wood										
PBC at APG	RA(O)									

Prior Years Funds

Total Funding up to FY04: $509,160,000

FY05

Site Information	Expenditures	FY Total
RA(O) AAML01	$ 29,000	
LTM AAML02	$ 9,000	
RA(O) AAWB01	$ 45,000	
RI/FS AAWB02	$202,000	
RI/FS AAWB04	$ 25,000	
LTM EABR03-A	$ 79,590	
IRA EABR11-I	$647,000	
RI/FS EACC1A-A	$ 27,310	
RI/FS EACC1A-B	$ 25,170	
LTM EACC1H-E	$100,000	
RI/FS EACC2A	$ 24,400	
RA(O) EACC4A	$779,960	
RI/FS EACC4A-B	$1,724,000	
RI/FS EACC5B	$200,000	
LTM EACI00	$ 79,870	
LTM EACQ00	$ 74,890	
LTM EAJF00	$140,140	
RI/FS EAJF01	$184,470	
LTM EALC05-C	$ 64,840	
RA(O) EANS01-A	$134,000	
LTM EANS01-D	$ 51,510	
IRA EAOE04	$ 37,290	
RI/FS EAOE19	$ 43,100	
RI/FS EAOE26	$222,600	
RA(O) EAOF01	$1,022,000	
RA(O) EAOF02	$ 97,660	
LTM EAOF03	$ 22,430	
RI/FS EAWW00	$ 80,000	
IRA EAWW10-B	$ 30,000	
RI/FS EAWW00	$ 80,000	
RA(C) PBC at APG	$12,285,730	
RA(O) PBC at APG	$653,000	
RI/FS PBC at APG	$ 60,000	
RAB/TAPP	$ 55,660	**$19,256,597**

Total Prior Year Funds: **$528,416,597**

Current Year (FY06) Requirements

Site Information		Requirements	FY Total
AAML01	RAO	29.000	
AAOA01	RI	372.000	
AAML01	RAO	29.000	
AAOA01	RI	372.000	
AAOA01	RI	75.000	
AAWB01	RAO	220.540	
AAWB02	RI	60.000	
AAWB02	RI	43.460	
EABR03-A	LTM	11.343	
EABR11-I	IRA	1,413.942	
EABR11-I	IRA	26.300	
EACC1A-B	RI	23.708	
EACC1H-E	LTM	50.000	
EACC1H-E	LTM	50.000	
EACC3N	LTM	16.000	
EACC4A	RAO	841.000	
EACC4A-B	RI	411.050	
EACC4A-B	RI	173.631	
EACC4A-B	RI	35.000	
EACC5A	RI	50.000	
EACC5A	RI	136.789	
EACC5B	RI	24.213	
EACC5B	RI	50.000	
EACC5B	RI	5.787	
EACC5B	RI	169.536	
EACI00	LTM	67.935	
EAGQ00	LTM	62.820	
EAJF00	LTM	116.000	
EAJF00	LTM	3.654	
EAJF00	LTM	155.000	
EAJF00	LTM	94.975	
EAJF00	RI	10.000	
EAJF01	RI	34.000	
EAJF01	RI	11.000	
EALC05-C	LTM	34.963	
EANS01-A	RAO	160.631	
EANS01-D	LTM	52.303	
EAOE04	IRA	50.878	
EAOE04	RI	30.000	
EAOE04	RI	20.000	
EAOE12	RI	30.000	
EAOE12	RI	60.000	
EAOE12	RI	18.000	
EAOE24	RI	40.000	
EAOE24	RI	10.000	

Current Year (FY06) Requirements (con't)

Site Information		Requirements	FY Total
EAOE24	RI	60.000	
EAOE24	RI	107.000	
EAOE26	RI	40.000	
EAOE26	RI	13.000	
EAOE26	RI	13.000	
EAOE26	RI	57.000	
EAOE26	RI	100.000	
EAOE26	RI	302.962	
EAOE28	RI	66.033	
EAOE28	RI	28.839	
EAOE28	RI	85.143	
EAOE28	RI	81.572	
EAOE28	RI	10.536	
EAOE28	RI	46.157	
EAOF01	RAO	1,179.000	
EAOF02	RAO	261.995	
EAWW14-C	RAC	967.000	
PBC at APG	RAC	10,947.014	
RAB/TAPP	RAB/TAPP	57.000	**$19,773,709**

Total Future Requirements: **$189,451,000**

Total IR Program Cost *(from inception to completion of the IRP):* **$ 737,641,306**

ABERDEEN PROVING GROUND

Military Munitions Response Program

MMRP Summary

Total AEDB-R MMRP Sites/AEDB-R sites with Response Complete: 18/0

AEDB-R Site Types:

3 Chemical Disposal
1 Explosive Ordnance Disposal Area
12 Unexploded Munitions/Ordnance
2 Open Burning

Most Widespread Contaminants of Concern: UXO

Media of Concern: Groundwater, Soil

Completed REM/IRA/RA: None

Total MMRP Funding

Prior Years (up to FY05)	$ 33,000
Current Year (FY06)	$ 0
Future Requirements (FY07)	$ 137,842,000
Total:	$ 137,875,000

DURATION OF MMRP

Year of MMRP Inception: 2000
Year of MMRP RIP/RC: 2017
Year of MMRP Completion Including LTM: 2047

MMRP Contamination Assessment

MMRP Contamination Assessment Overview:

Eighteen MMRP sites have been identified at Aberdeen Proving Ground. Site investigations are ongoing during FY06.

MMRP Cleanup Exit Strategy:

At the present time, RAs are expected at 17 of the sites. This may change when the SI is completed.

2002
CTT Range Inventory

ABERDEEN PROVING GROUND

Military Munitions Response Program

Site Descriptions

APG-001-R-01
5400 Block

SITE DESCRIPTION

The "Search for Explosives Sources the Western Boundary Study Area" (1998) includes this site as the Block 5400 Demolition Training Area. The report states that the Ordnance School and Training Center used this area until the mid-1950s for training. The estimated period of use is from 1939 to 1956 because the Army acquired the area in 1939. The 85-acre 5400 Block is located west of Boothby Hill Road in the current cantonment area in the northern portion of the AA. The AA cantonment area includes office buildings, recreation facilities, maintenance facilities, residences, and storage. The "Search for Explosives Sources in the Western Boundary Study Area" states that up to 100 pound "bare charges of TNT" were permitted for demolishing 75mm projectiles (probably containing TNT). 75mm rounds were detonated in 4-foot deep covered pits. Troops detonated up to three 75mm rounds at a time in covered pits. Low levels of explosive compounds and the degradation products were detected in groundwater in the Western Boundary Study Area during the Remedial Investigation (RI). However, the 5400 Block is outside the flow path toward the Western Boundary Study Area Wells, and is not suspected to be a source of explosives. Specific records of UXO responses were not found for the 5400 Block; however, digging permits are required prior to construction within the AA.

STATUS

REGULATORY DRIVER: CERCLA

RAC Score: Serious

CONTAMINANTS: UXO

MEDIA OF CONCERN: Soil

Phases	Start	End
PA	200305	200312
SI	200506	200703
RI/FS	200910	201009
RD	201510	201609
RA(C)	201610	201709
RAO	201710	203209
LTM	203210	204709

RIP: 201710
RC: 203209

CLEANUP STRATEGY

Excavate and off post removal of 2,500 cy soil. HRR will be included during the installation-wide SI.

APG-002-R-01
A and B Fields

SITE DESCRIPTION

The 63-acre A and B-Fields is located in the eastern portion of the EA cantonment area. The firing point was A-Field, which was on the north shore of Kings Creek in the Bush River Area. Historic maps label the firing point as "A" and the impact areas as "B" through "E." The B-Field impact area is within the non-operational range footprint, and is located on the southern shore of Kings Creek in the Canal Creek Area. The remaining impact areas are within the operational range footprint. The range is labeled as an "Artillery Component Testing Range" on the historic maps from 1923 and 1948. The 1923 Range Availability Chart lists this as a 75mm range. This map also identifies that a concrete gun position is under construction at B-Field. Thus, there is potential for B-Field to be both an impact area and firing point. The "Historical Tour of the Ranges in the Edgewood Area" identifies the period of use for A-Field as 1918 to the 1940s. It also identifies B-Field as the impact area for the A Field firing point and as a pre-WWI Philadelphia Gun Club. The RFA identifies B-Field and F-Field as impact areas for the mortar and artillery component testing range, which had a firing point in A-Field. Currently, the A and B Fields area is the main cantonment area at the EA, including office buildings, research and development, open water, industry, and storage. Due to the history of ordnance use, UXO surveillance is required during all material removal activities and intrusive work at EA.

STATUS

REGULATORY DRIVER: CERCLA

RAC Score: High

CONTAMINANTS OF CONCERN:
UXO

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	200305	200312
SI	200506	200703
RI/FS	200910	201009
RD	201410	201509
RA(C)	201510	201609
LTM	201610	204609

RC: 201609

The RFA also identifies A-Field as a site for testing of chemical munitions. It is likely that there was little or no testing with lethal agent filled munitions, as there is no record of such testing in A-Field. Test sites within A-Field included the Drop Bomb Tower, Surveillance Bins, and potentially other sites. The types of munitions tested at the Drop Bomb Tower were not documented, but the testing probably involved primarily incendiary and smoke munitions. Expected munitions types at A and B Fields include large caliber (smoke, high explosive (HE), and practice), small arms, mortars (smoke, HE, and practice), and toxic chemical munitions.

AEDB-R sites associated with the A and B Fields include EABR18-D (A-Field Test Sites (2) - Cluster 18) and EACC30
(B-Field Range Area - Cluster 30). Since EABR18-D is considered response complete, EACC30 is associated with this DMM site. Neither EABR18-D nor EACC30 address UXO, DMM and/or MC.

CLEANUP STRATEGY

.

Potential CWM Site, CTC's developed individually. **Study**: RI + FS, **RA**: Excavation + Off-Site Transportation and Disposal + Bulk Material Storage + Decon Facility + GW Monitoring Wells **LTM**: GW Monitoring + 6 Five Year Reviews

APG-002-R-02
B-Field Kings Creek Dump-Cluster 3B

SITE DESCRIPTION

The B-Field Kings Creek dump site is a disposal site where demolition debris, chemical materiel, and miscellaneous junk were placed at the dump site. CS has been found in bags at this site and were removed.

CLEANUP STRATEGY

CWM Site, CTC's developed individually. **Study**: RI + FS, **RA**: Excavation + Off-Site Transportation and Disposal + Bulk Material Storage + Decon Facility + GW Monitoring Wells **LTM**: GW Monitoring + 6 Five Year Reviews

STATUS

REGULATORY DRIVER: CERCLA

RAC Score: High

CONTAMINANTS OF CONCERN:
UXO

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	200210	200312
SI	200506	200703
RI/FS	200910	201109
RD	201510	201609
RA(C)	201610	201709
LTM	201710	204709

RC: 201709

APG-002-R-03
Kings Creek Chemical Disposal Site

SITE DESCRIPTION

This site is the 2.28 acre portion of the Kings Creek area where CWM potentially exists.

CLEANUP STRATEGY

CWM Site, CTC's developed individually. **Study**: Completed/Funded, **RA**: OE RA+OE IC + Excavation + Off-Site Transportation and Disposal + Bulk Material Storage + Decon Facility
LTM: GW Monitoring (OE monitoring is addressed under MMRP site APG-002-R-01)

STATUS

REGULATORY DRIVER: CERCLA

RAC Score: High

CONTAMINANTS OF CONCERN:
UXO

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	200305	200409
SI	200506	200703
RD	201410	201509
RA(C)	201510	201609
LTM	201610	204609

RC DATE: 201609

APG-003-R-01
Bush River Area

SITE DESCRIPTION

The 517-acre Bush River Area DMM site is located on a peninsula in the northeastern portion of the EA, and is bounded on the north by Lauderick Creek, on the east and south by the Bush River, and on the southwest by Kings Creek. Since 1918, the Bush River Area has been used for training, test activities, waste disposal, and chemical storage under a military-industrial land use setting. The Army designated the southern portion of the peninsula as A-Field for use in artillery firing, training, and testing and smoke and incendiary munitions testing facilities. APG primarily used the Bush River Area as a storage/disposal facility for different types of materials used in research, testing, and production operations in the EA from 1918 to the present. Materials stored include chemical warfare agents, white phosphorus, munitions, contaminated soil and wastewater, decontamination agents containing chlorinated solvents, and radioactive materials. Past activities have included artillery testing, decontamination of ton-containers containing chemical warfare agents, creating landfills in marshes, disposal of waste in unlined pits, ammunition renovation, and radioactive material processing and packaging. Portions of the Bush River Area were also used for disposal of chemical warfare agents, munitions, dredge spoil, radioactive materials, and construction/demolition waste by means of burning, dumping, or burial. During both WWI and WWII, the area was a main storage and transshipment depot for chemical filled munitions. Mustard agent degradation products and explosive-related compounds were detected in the groundwater, surface water, and sediment within the Bush River Area. Magnetic anomalies have also been identified within the Bush River Area. Based on its past use and period of use of the ranges at the EA, the period of use for the Bush River Area DMM site is estimated as 1918 to 1961 It is also estimated that demolition materials, smokes, artillery (medium and large caliber), mortars, pyrotechnics, riot control agents, radiological munitions, and toxic chemical munitions may have been discarded in the Bush River Area.

STATUS

REGULATORY DRIVER: CERCLA

RAC Score: High

CONTAMINANTS OF CONCERN:
UXO

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	200305	200312
SI	200506	200703
RI/FS	200910	201009
RD	201410	201509
RA(C)	201510	201609
RA(O)	201610	203109
LTM	203110	204609

RIP: 201610
RC: 203109

CLEANUP STRATEGY

CWM Site, CTC's developed individually. **Study**: RI + FS, **RA**: Excavation + Off-Site Transportation and Disposal + Bulk Material Storage + Decon Facility + GW Monitoring Wells **LTM**: GW Monitoring + 6 Five Year Reviews

APG-003-R-02
30th Street Landfill

SITE DESCRIPTION

A 1992 removal action at this landfill indicated large numbers of metallic objects. Small numbers of chemical munitions were found at the landfills edge.

CLEANUP STRATEGY

CWM Site, CTC's developed individually. **Study**: RI + FS, **RA**: Excavation + Off-Site Transportation and Disposal + Bulk Material Storage + Decon Facility + GW Monitoring Wells **LTM**: GW Monitoring + 6 Five Year Reviews

STATUS

REGULATORY DRIVER: CERCLA

RAC Score: High

CONTAMINANTS OF CONCERN:
UXO

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	200210	200312
SI	200506	200703
RI/FS	200910	201109
RD	201510	201609
RA(C)	201610	201709
RA(O)	201710	202209
LTM	202310	204709

RIP: 201709
RC: 202209

APG-003-R-03
Bush River Dock

SITE DESCRIPTION

The Bush River Dock area was used for loading for transport of bulk chemical agents.

CLEANUP STRATEGY

CWM Site, CTC's developed individually. **Study**: RI + FS, **RA**: Excavation + Off-Site Transportation and Disposal + Bulk Material Storage + Decon Facility + GW Monitoring Wells **LTM**: GW Monitoring + 6 Five Year Reviews

STATUS

REGULATORY DRIVER: CERCLA

RAC Score: High

CONTAMINANTS OF CONCERN:
UXO

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	200210	200312
SI	200506	200703
RI/FS	200910	201109

RC: 201109

APG-003-R-04
Chemical Munitions Burial Site

SITE DESCRIPTION

Historical aerial photograph from 1929 and the 1940's show ground scars. The site may have been used of deteriorated or partially functioning chemical munitions.

CLEANUP STRATEGY

CWM Site, CTC's developed individually. **Study**: RI + FS, **RA**: Excavation + Off-Site Transportation and Disposal + Bulk Material Storage + Decon Facility + GW Monitoring Wells **LTM**: GW Monitoring + 6 Five Year Reviews

STATUS

REGULATORY DRIVER: CERCLA

RAC Score: High

CONTAMINANTS OF CONCERN:
UXO

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	200212	200305
SI	200506	200703
RI/FS	200910	201009
RD	201410	201509
RA(C)	201510	201709

RIP: 201709

APG-004-R-01
Canal Creek Area

SITE DESCRIPTION

The Canal Creek Area DMM site is located in the central portion of the EA cantonment area. It is bounded on the west by the Gunpowder River and the West Branch of Canal Creek. Kings Creek and the Bush River form the eastern boundary of the site, and the installation boundary forms the northern boundary of the site. The Army used the 2,120-acre Canal Creek Area site to develop, test, and manufacture military-related chemicals since WWI. The chemicals produced include chlorine, mustard, tear gas, phosgene, clothing-impregnating material, chloropicrin, white phosphorus, pyrotechnics, and arsenicals. Other activities included filling chemical munitions, disposing of domestic and production wastes, and using degreasing solvents on equipment. The plants were most active during WWI and WWII, and after WWII the Army scaled down chemical manufacturing and stopped using most of its plants. The military has conducted munitions-filling operations in the Canal Creek Area since 1918. Discharges from these filling plants contaminated sediments of Canal Creek with white phosphorus. Based on its past use and period of use of the ranges at the EA, the period of use for the Canal Creek Area DMM site is estimated as 1918 to 1950. It is also estimated that mortars, pyrotechnics, riot control agents, and toxic chemical munitions may have been discarded in the Canal Creek Area.

STATUS

REGULATORY DRIVER: CERCLA

RAC Score: High

CONTAMINANTS OF CONCERN:
UXO

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	200305	200312
SI	200506	200703
RI/FS	200909	201509
RD	201510	201609
RA(C)	201610	201709
LTM	201710	204709

RC: 201709

The "Historical Tour of the Ranges in the Edgewood Area" references a Range Clearance of Canal Creek. The range clearance was conducted in May 1982 by the Technical Escort Unit, and it consisted of visual surface sweep only. Four 4-inch stokes mortars were found, three of which had bursters. All four were found behind the Non-Commissioned Officers Club, and all four were filled with colored smoke. Periodic surface UXO sweeps are conducted along a quarter mile stretch of the boundary (including the Canal Creek Area) as a safety precaution. During the 1995 sweep, one UXO item was found in Canal Creek. The most recent sweep was conducted in 2001. Due to the history of ordnance use, UXO surveillance is required during all material removal activities and intrusive work at EA. There is potential for DMM to be present in the entire Canal Creek Area. Currently, the Canal Creek Area is the main cantonment area at the EA, including office buildings, recreation facilities, family housing, research and development, storage, and an airfield. The Installation Action Plans states that UXO/Chemical Warfare Materiel (CWM) is located throughout the Canal Creek Study Area. DSERTS EACC7 includes UXO/CWM found along the installation boundary.

CLEANUP STRATEGY

CWM Site, CTC's developed individually. **Study**: RI + FS, **RA**: Excavation + Off-Site Transportation and Disposal + Bulk Material Storage + Decon Facility + GW Monitoring Wells **LTM**: GW Monitoring + 6 Five Year Reviews

APG-005-R-01
F-Field

SITE DESCRIPTION

The 36-acre F-Field is located on the EA at the southeast corner of the cantonment area. The range is within the Canal Creek Area and Other Edgewood Areas as defined by the IRP. The "Historical Tour of the Ranges in the Edgewood Area" identifies the period of use for F-Field as 1918 to the 1940s. During this time, F-Field was used as a firing point for short range mortar and artillery into G-Field and as an impact area for the A-Field firing point. The 1923 Range Availability Chart lists this as a 37mm range. A tower either for hoist or for a gun mount to fire downwards was present at the site. It is also likely the F-Field was used as a training area for troops from Fort Hoyle during the 1920s and 1930s. The report also states that the area was used for flamethrower testing from the 1940s to the early 1970s, and then the 1970s for decontamination testing. A small amount of pyrotechnic mixture testing has also been accomplished in F-Field during the post-WWII time period. The test materials were primarily smoke mixtures and did not contain toxic chemical agents. Present day activities in the F-Field include the Chemical Transfer Facility and the Process Engineering Facility.

STATUS

REGULATORY DRIVER: CERCLA

RAC Score: Serious

CONTAMINANTS OF CONCERN:
UXO

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	200305	200312
SI	200506	200703
RI/FS	201110	201209
RD	201510	201609
RA(C)	201610	201709
LTM	201710	204709

RC: 201709

The "Historical Tour of the Ranges in the Edgewood Area" references a Range Clearance of F-Field. The range clearance was conducted in June 1984 by the Technical Escort Unit, and it consisted of visual surface sweep only. No conventional munitions were located during the surface sweep; however, an unfuzed 4.2-inch chemical mortar was found during the sweep. A magnetometer survey and UXO clearance were accomplished during the construction of the Process Engineering Facility (circa 1990). This clearance operation resulted in the finding of more than 60 ordnance items in the area. Most items were at the surface, but some were found at depths of as much as 5-feet. The most common items found include smoke grenades and canisters, HC smoke pots, incendiary bombs, and white phosphorus filled 4.2-inch mortars. Due to the history of ordnance use, UXO surveillance is required during all material removal activities and intrusive work at EA.

CLEANUP STRATEGY

CWM Site, CTC's developed individually. **Study**: RI + FS, **RA**: Excavation + Off-Site Transportation and Disposal + Bulk Material Storage + Decon Facility **LTM**: GW Monitoring + 6 Five Year Reviews

APG-006-R-01
Fort Hoyle

SITE DESCRIPTION

The 284-acre Fort Hoyle DMM site is located in the EA at the southern end of the cantonment area. It is bounded on the west by the Gunpowder River, the east by the Bush River, the south by the restricted area, and the north by the Canal Creek Area. The site is divided into two non-contiguous parts by F-Field, which is described above. The Fort Hoyle DMM site is within the Other Edgewood Areas IRP study area. Fort Hoyle was first used as a training area during WWI, and continued into the 1950s and early 1960s. Throughout the early period of use, high explosive rounds, as well as chemical munitions, would have been buried as a means of disposal. Possible firing and use of chemical weapons may have occurred, but the area was not designated as an impact area. For example, some training exercises included firing of mustard-filled artillery and mortar, and other exercises may have included the use of gas ID kits. Much of the area was used for chemical warfare training and would have included the use and release of chemicals. These activities included identification of chemical agents, decontamination or equipment and personnel, use of chemical weapons and possibly disposal of unserviceable warfare material. There is little documentation concerning training activities or usage of specific portions of the training area. The most commonly used chemical munitions at this site were most likely tear gas agents, smoke filled munitions, and chemical agent munitions (mustard or phosgene).

STATUS

REGULATORY DRIVER: CERCLA

RAC Score: High

CONTAMINANTS OF CONCERN:
UXO

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	200305	200312
SI	200506	200703
RI/FS	200910	201009
RD	201510	201609
RA(C)	201610	201709
LTM	201710	204709

RC: 201709

Based on its past, the period of use for the Fort Hoyle DMM site is estimated as 1918 to 1960. It is also estimated that artillery (medium and large caliber), mortars, toxic chemical munitions, riot control agents, and screening smokes may have been used or discarded at Fort Hoyle. There is potential for DMM to be present in the entire Fort Hoyle area. Currently, Fort Hoyle is the main cantonment area at the EA, including research and development, office buildings, recreation facilities, storage, and undeveloped property. Specifically, the Wheeled Vehicle Training Facility is within the Fort Hoyle DMM site, and the WWI Fort Hoyle barracks are currently used as offices. Due to the history of ordnance use, UXO surveillance is required during all material removal activities and intrusive work at EA. During the 1987 construction of the Wheeled Vehicle Training Facility, the only munitions item found was an inert, lead-filled, 5-inch cannonball. A magnetometer sweep of the entire construction site was also conducted, and no additional munitions were found. Additional UXO have been found at the Douglas Road Munitions Disposal Site located near the

intersection of Wise and Parrish Roads. Over two dozen stokes mortars (including high explosives, white phosphorus, and incendiary) have been discovered in this area. There is no specific delineation to the Douglas Road Munitions Disposal Site, and the munitions found there predate WWII.

CLEANUP STRATEGY

CWM Site, CTC's developed individually. **Study**: RI + FS, **RA**: Excavation + Off-Site Transportation and Disposal + Bulk Material Storage + Decon Facility **LTM**: GW Monitoring + 6 Five Year Reviews

APG-007-R-01
French Mine Field

SITE DESCRIPTION

The 41-acre French Mine Field is located east of Maryland Boulevard in the current cantonment area in the northern portion of the AA. The site is currently used for supply and storage, and portions of the site are undeveloped. The "Search for Explosives Sources in the Western Boundary Study Area" (1998) includes this site as the Block 4900 Demolition Training Area. It is named the French Mine Field in this report because that is the name commonly used for this site. The report states that the Ordnance School and Training Center used this area until the mid-1980s for training with explosive blocks up to several pounds. The estimated period of use is from 1939 to 1986 because the Army acquired the area in 1939. Most demolition work was done with 1/4, 1/2, and 1 pound blocks of TNT. WWI French land mines have been found in the area. The area was disked to 3 feet for mines in the 1970s. It is not known if more mines remain or their origin. Low levels of explosive compounds and their degradation products were detected in groundwater in the Western Boundary Study Area during the Remedial Investigation (RI). However, the French Mine Field is not up gradient of any area where explosives have been detected in groundwater and is not in the groundwater flow path toward the Western Boundary Study Area wells. It is not suspected to be the source of explosives contamination. The French Mine Field is also part of the Philips Army Airfield Landfill/City of Aberdeen Wells - Operable Unit 2 (DSERTS AAWB02), which addresses the groundwater near the airfield and the wells located north of the landfill. Specific records of UXO responses were not found for the French Mine Field; however, UXO sweeps and digging permits are required prior to construction within the French Mine Field.

STATUS

REGULATORY DRIVER: CERCLA

RAC Score: High

CONTAMINANTS OF CONCERN:
UXO

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	200305	200312
SI	200506	200703
RI/FS	200910	201009
RD	201510	201609
RA(C)	201610	201709
RA(O)	201710	203209
LTM	203210	204709

RIP: 201710

In 2004 a six acre site was selected to perform some geophysical work. They found no mines but did find small arms cases and unused blanks, expended smoke/signal devices, and other miscellaneous munitions debris. No MEC items or items presenting an explosive safety hazard were discovered.

CLEANUP STRATEGY

SI/HRR will be included in the installation-wide SI.

APG-008-R-01
Hog's Point Bomb Target

SITE DESCRIPTION

The 468-acre Hog's Point Bomb Target is located off the shore of the Westwood Area at the western edge of the EA. The majority of the former range is within the Gunpowder River; however, a portion of the former range overlaps private property on the opposite shore of the river. The private property is currently used primarily for housing. The Gunpowder River is currently used for fishing and other recreational purposes.

Discussions with the Westwood Area IRP Manager, Ms. Cindy Powels, referenced firing points at Hog's Point and Piney Point. However, the map provided ("Range Layout Between Piney & Hog Points") indicates two "bomb targets" off the shore of Hog's Point and Piney Point. The map is originally from January 25, 1943, and it was revised February 18, 1943. Since the map is the only data source for this site, the period of use is approximated as 1939 to 1946. Interviews with installation personnel indicate that this range was actually a mortar range, not an aircraft bombing target. The "Glossary of EOD Terminology, Abbreviation, and Designations" dated April 4, 1994 states that a "bomb" may be lobbed from a mortar. Thus, although the map states "bomb target" it may actually be referencing a mortar target. Installation personnel also stated that the range was used for artillery certification. In order to be certified, the artilleryman would need to fire at least one chemical round. It is unclear if chemical agent filled mortars were used at this range, but the potential does exist. Mr. Larry Jonas indicated that mostly smoke mortars were used at this former range and that the targets were in the water (as shown on the 1943 map). Since 4.2-inch mortars were used at the other ranges during this time period at APG, the range was mapped using the maximum distance of 2,400-yards for a 4.2-inch Stokes mortar. This distance was used to establish range fans at both Hog's Point and Piney Point. The eastern most portion of the range fans is in the operational range footprint. The range fan does extend to private property on the opposite shore of the Gunpowder River; however, it is unlikely that the mortars impacted this area since the farthest target was only 1,895-feet from the APG shoreline.

Since the specific type of ordnance used at the Hog's Point Bomb Target is unknown, it is assumed that there is a potential for high explosive (HE), smoke and pyrotechnic, chemical, and practice mortars to have been used at the site. There are no records of UXO responses at this site.

STATUS

REGULATORY DRIVER: CERCLA

RAC Score: High

CONTAMINANTS OF CONCERN:
UXO

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	200305	200312
SI	200506	200703
RI/FS	200910	201009
RD	201510	201609
RA(C)	201610	201709
LTM	201710	204709

RC: 201709

CLEANUP STRATEGY

SI/HRR will be included in the installation-wide SI. Water Range- modified sampling.

APG-009-R-01
Range No. 3

SITE DESCRIPTION

The 15-acre Range No. 3 is located in the Northeastern portion of the AA. A 1927 map of APG includes "Det. Range No. 3." The map does not indicate what "Det." stands for. The 15-acre portion included in the CTT inventory the firing point. This is concluded because 1,500, 3,000, 4,000, and 6,000-yard markers increase toward the south and into the operational range area. The yard markers are also labeled with "B.P." which stand for "bomb proof' according to the legend. The map does not indicate the type of munitions used at the range. Based on the range layout and timeframe, it is estimated that small arms and/or artillery (large and medium caliber) were used at this range. Based on the map and periods of use of other ranges at APG, the period use for Range No. 3 is estimated as 1918 to 1939. The Vibration Test Facility is currently located at this site. A UXO survey is required prior to construction at APG, and no UXO was found during the construction of the Vibration Test Facility.

STATUS

REGULATORY DRIVER: CERCLA

RAC SCORE: Serious

CONTAMINANTS OF CONCERN:
UXO

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	200305	200312
SI	200506	200703
RI/FS	200910	201009
RD	201510	201609
RA(C)	201610	201709
LTM	201710	204709

RC: 201709

CLEANUP STRATEGY

ACTIVE RANGE

APG-010-R-01
West Range

SITE DESCRIPTION

The 20-acre West Range is located within the Westwood Area of the EA on the northern shore of the Gunpowder River. The 1923 Range Availability Chart identifies the West Range as a 37mm and 75mm range. The map indicates that the 37mm targets were in the water, and the 75mm targets were on land. Both the land and water targets are within the operational range footprint. Only the firing point is within the non-operational range footprint. The Range Availability Chart also states that two concrete gun positions are under construction at the West Range firing point. The map also identifies a .45 caliber pistol range on the shore of the Gunpowder River. The pistol range appears to be co-located with the West Range firing point. It is estimated that this range was used from 1920 to the 1940s. Currently, the West Range is the main cantonment area at the EA, including office buildings, undeveloped property, and storage. There is no anticipated change in future land use as this site. Due to the history of ordnance use, UXO surveillance is required during all material removal activities and intrusive work at EA. No records of specific UXO responses were located for West Range.

STATUS

REGULATORY DRIVER: CERCLA

RAC Score: Serious

CONTAMINANTS OF CONCERN:
UXO

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	200305	200312
SI	200506	200703
RI/FS	200910	201009
RD	201510	201609
RA(C)	201610	201709
LTM	201710	204709

RC: 201709

CLEANUP STRATEGY

SI/HRR will be included in the installation-wide SI. Water Range- modified sampling.

APG-011-R-01
Westwood Area

SITE DESCRIPTION

The 294-acres Westwood DMM site is located in the northwest corner of the EA. It is bounded on the north by the installation boundary, on the south by the Gunpowder River, on the east by the west branch of Canal Creek, and on the west by the Reardon Inlet. The remainder of the Westwood Area is located within the operational range footprint (primarily the portion west of the Reardon Inlet known historically as the Westwood Range). The Westwood Area was used from 1918 to the 1970s for a variety of testing and training activities, material storage, manufacturing and munitions assembly operations, and waste disposal activities. The materials the Army tested included napalm, pyrotechnics, blister agents, and white phosphorus. The US Army Chemical School used the Westwood Area for training during the post-WWII period, principally for radiological defense testing and training. Record searches found no documents indicating munitions containing CWM were tested or buried at the Westwood Area, nor have such items been found. Other types of munitions, smoke and riot control, have been found at the site. Periodic surface UXO sweeps are conducted along a quarter mile stretch of the boundary as a safety precaution. A 1995 surface visual UXO search discovered 22 UXO or related items in the Westwood Area. The most recent UXO surface sweep in 2001, discovered a suspected disposal/burn pit (in the operational range portion) and a white phosphorus filled munitions. The portion of the Westwood Area east of Reardon Inlet contained chlorine and gas mask manufacturing facilities, laboratories, radiological vulnerability test sites, and storage areas. Based on its past use, the period of use for the Westwood Area DMM site is estimated as 1918 to 1971 It is also estimated that artillery, mortars, pyrotechnics, and other munitions may have been discarded in the Westwood Area. There is potential for DMM to be present in the entire Westwood Area. Currently, the Westwood Area is the main cantonment area at the EA, including office buildings, industry, and storage areas.

The Installation Action Plans states that there is potential for UXO/CWM to be located throughout the Westwood Study Area. Under DSERTS EAWW00, the Installation Action Plan states that it is likely that UXO and military-unique material along the boundary and potentially off-post (Gunpowder River) will need to be addressed. This DSERTS number has been applied to the entire Westwood DMM site included in this inventory.

STATUS

REGULATORY DRIVER: CERCLA

RAC Score: High

CONTAMINANTS OF CONCERN:
UXO

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	200305	200312
SI	200506	200703
RI/FS	200910	201109
LTM	201510	204509

RC: 201109

CLEANUP STRATEGY

CWM Site, CTC's developed individually. **Study**: CWM EE/CA, **RA**: None (based on site description), **LTM**: OE Monitoring + GW Monitoring.

APG-012-R-01
School Field II

SITE DESCRIPTION

The 125-acre School Field II area is located in the northeast corner of the EA along the Lauderick Creek. The Army Chemical School designated portions of the Lauderick Creek Area as School Fields I through IX. The majority of the site is within the former School Field II, and the northern most portion of the site was part of the former School Field I. The remainder of School Field I is within the operational range footprint. School Field II is currently used for research and development, as well as, part of the golf course. A portion of the site is also undeveloped.

The "Historical Tour of the Ranges in the Edgewood Area" indicates that the Chemical School used the School Fields from the 1920s to 1951. Chemical School training included mortars, grenades, agents, decontaminants, smoke and tear gas. Specifically, the 1944 map shows School Field II as "Decontamination Projects." The RFA also states that there is a potential to encounter both conventional and chemical ordnance items (hand grenades, rifle grenades, toxic chemical munitions, mortars, and gas ID sets) at the site. Due to the history of ordnance use, UXO surveillance is required during all material removal activities and intrusive work on the former School Fields. The "Removal Action of Surface Debris at the School Fields Training Areas" identified UXO items at School Field II. UXO items located during this project included expended rocket motors, expended flame rocket heads, 4.2-inch mortar round, and numerous expended training items. In the 1960s, the Technical Escort Unit reportedly removed 30-pound mustard bombs from this portion of the golf course. Golfers were exposed to the mustard, which was uncovered when the mustard bombs were exposed at the surface.

In 1991, the Generic Work plan for remedial investigation at the EA of APG was published, and it divided the Lauderick Creek Area into eight clusters for future study. The clusters are investigated separately in the IRP. School Field II included Cluster 13 - School Fields I and II Areas. DSERTS sites associated with the School Field II include EALCOO (Lauderick Creek), EALC13-A (School Field #1 Test Areas (2) - Cluster 13), EALC13-B (School Field #2 Dumps - Cluster 13), and EALC13-D (Surficial Aquifer- Cluster 1). EALC-13A, EALC-13B, and EALC13-D do not address UXO, DMM and/or MC. The contaminant of concern for DSERTS EALCOO is chemical warfare materiel (CWM).

STATUS

REGULATORY DRIVER: CERCLA

RAC Score: High

CONTAMINANTS OF CONCERN:
UXO

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	200305	200312
SI	200506	200703
RI/FS	200910	201009
RD	201410	201509
RA(C)	201510	201609
LTM	201610	204609

RC DATE: 201609

A CWM removal action was conducted at the Lauderick Creek Area. The Lauderick Creek Boundary Area CWM Removal Action included an area defined as a 0.25 mile wide strip of land, located inside the northern boundary of the study area, beginning at the Bush River end of APG installation boundary and extending approximately 3.2miles along the boundary line to Edgewood Road. The removal action was completed in the summer of 2003. The CWM removal action, which was funded under IRP and completed by USACE, did not cover the southern section of this site. Therefore, a portion of School Field II may still contain UXO and/or DMM. In addition, the CWM removal action did not address MC contamination. This CWM work was done under DSERTS EALCOO.

CLEANUP STRATEGY

SI/HRR will be included in the installation-wide SI.

APG-013-R-01
School Field VI

SITE DESCRIPTION

The 22-acre School Field VI area is located in the center of the Lauderick Creek Area. It is bounded on the south by an un-named tributary to Lauderick Creek, on the east by Belardi Road, to the north by Fairview Point Road, and to the west by another un-named tributary and undeveloped property. The Army Chemical School designated portions of the Lauderick Creek Area as School Fields I through IX. The majority of the site is within the former School Field VI, and the northern most corner of the site was part of the former School Field IV. The remainder of School Fields IV and VI are within the operational range footprint. Buildings on site include a sand filter; a detention chamber; chlorination building; Buildings 6811, 6812, 6814; and a range trailer.

STATUS

REGULATORY DRIVER: CERCLA

RAC Score: High

CONTAMINANTS OF CONCERN:
UXO

MEDIA OF CONCERN:
Soil, Groundwater

Phases	Start	End
PA	200305	200312
SI	200506	200703
RI/FS	201110	201209
RD	201510	201609
RA(C)	201610	201709
LTM	201710	204709

RC: 201709

The "Historical Tour of the Ranges in the Edgewood Area" indicates that the Chemical School used the School Fields from the 1920s to 1951. Chemical School training included mortars, grenades, agents, decontaminants, smoke and tear gas. The RFA also states that there is a potential to encounter conventional UXO items and possible chemical agents from training operations. Due to the history of ordnance use, UXO surveillance is required during all material removal activities and intrusive work on the former School Fields. The "Removal Action of Surface Debris at the School Fields Training Areas" did not identify any UXO items at School Field VI. However, during the Lauderick Creek CWM Boundary Removal Action, one 2-inch smoke mortar and two 4.2-inch mortars were discovered in the School Fields VI Area. The CWM removal action, which was funded under IRP and completed by USACE, did not completely cover the lower southwestern section of this site. Therefore, a portion of School Field VI may still contain UXO and/or DMM. In addition, the CWM removal action did not address MC contamination. This CWM work was done under DSERTS EALCOO. Both conventional and chemical ordnance items (hand grenades, rifle grenades, toxic chemical munitions, mortars, and gas ID sets) may be encountered at the site.
In 1991, the Generic Work plan for the RI at the EA of APG was published, and it divided the Lauderick Creek Area into eight clusters for future study. The clusters are investigated separately in the IRP. School Field VI was not included in any of the clusters. However, the Installation Action Plan for APG identifies eighteen DSERTS sites within the Lauderick Creek Area. The contaminant of concern for DSERTS EALCOO is CWM, and it includes School Field VI.

APG-013-R-01
School Field VI

From the 1950s to the 1970s, this portion of School Field VI was used as the NIKE Barracks Area. The Barracks Area consists of five buildings (including Buildings 6811, 6812, and 6814), a septic tank, a subsurface sand filter bed, and five underground fuel oil storage tanks. The area is currently used by the Maryland National Guard as an office complex and for equipment storage. A portion of the Nike barracks served as the field office for the Lauderick Creek Boundary CWM Removal Action. A potion of the site is also undeveloped.

CLEANUP STRATEGY

CWM Site, CTC's developed individually. **Study**: CWM EE/CA, **RA**: CWM RA + OE IC + EDS + Excavation + Off-Site Transportation and Disposal + Bulk Material Storage + Decon Facility, **LTM**: GW monitoring

MMRP Schedule

Initiation of MMRP: 2002

Past Phase Completion Milestones

2002
PA - Army-wide CTT Range Inventory

Projected ROD/DD Approval Dates: N/A

Projected Construction Completion: 2017

Schedule for Five Year Reviews: N/A

Estimated Completion Date of MMRP including LTM: 2047

Aberdeen Proving Ground MMRP Schedule

(Based on current funding constraints)

AEDB-R #	Phase	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+
APG-001-R-01	RI/FS									
	RD									201609
	RAC									201709
	RAO									203209
	LTM									204709
APG-002-R-01	RIFS									
	RD									201509
	RA(C)									201609
	LTM									204609
APG-002-R-02	RI/FS									
	RD									201609
	RAC									201709
	LTM									204709
APG-002-R-03	RD									201509
	RAC									201609
	LTM									204609
APG-003-R-01	RI/FS									
	RD									201509
	RAC									201609
	RAO									203109
	LTM									204609
APG-003-R-02	RI/FS									
	RD									201509
	RAC									201609
	RAO									202209
	LTM									204709
APG-003-R-03	RI/FS									
APG-003-R-04	RI/FS									
	RD									201509
	RAC									201709

AEDB-R #	Phase	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+
APG-004-R-01	RI/FS									
	RD									201609
	RAC									201709
	LTM									204709
APG-005-R-01	RI/FS									
	RD									201609
	RAC									201709
	LTM									204709
APG-006-R-01	RI/FS									
	RD									201609
	RAC									201709
	LTM									204709
APG-007-R-01	RI/FS									
	RD									201609
	RAC									201709
	RAO									203209
	LTM									204709
APG-008-R-01	RI/FS									
	RD									201609
	RAC									201709
	LTM									204709
APG-009-R-01	RI/FS									
	RD									201609
	RAC									201709
	LTM									204709
APG-010-R-01	RI/FS									
	RD									201609
	RAC									201709
	LTM									204709
APG-011 R-01	RI/FS									
	LTM									204509

AEDB-R #	Phase	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15+
APG-012-R-01	RI/FS									
	RD									201509
	RAC									201609
	LTM									204609
APG-013-R-01	RI/FS									
	RD									201609
	RAC									201709
	LTM									204709

Prior Years Funds

Total Funding up to FY04*:* **$0**

FY05

Site Information	Expenditures	FY Total
SI for all MMRP sites	$33,000	**$33,000**

Total Prior Year Funds: **$33,000**

Current Year (FY06) Requirements:

Site Information	Requirements	FY Total
		$0

Total Future Requirements: **$137,842,000**

Total MMRP Program Cost (from inception to completion of the MMRP)**:** **$137,875,000**

Community Involvement

On May 17, 2003, Aberdeen Proving Ground shared the Fiscal Year 2003 Obligation Plan with the Restoration Advisory Board (RAB) and the State of Maryland Department of the Environment (MDE). Upon final approval of the APG IRP Installation Action Plan (IAP), the document was distributed to the RAB members for their information. Information contained in the FY04 IAP, including the FY04 Obligation Plan, was shared with the RAB and MDE representatives at RAB meetings during 2004, and information from the FY05 IAP and Obligation Plan are being shared during 2005 RAB meetings, with information relevant to each study area discussed following a detailed update presented at the monthly meeting. This distribution is consistent with APG's ongoing interactive and proactive relationship with local stakeholders, including citizens, regulators, and elected officials, to promote involvement in the IRP. Through various aspects of a mature community relations program, APG continues to reinforce the desire and need for stakeholder participation early in the restoration process. APG's program involves community members in initial project meetings through to formal public comment periods. APG's RAB continues to meet on a monthly basis with sub-committee or topical interim meetings as needed. Tours are held several times a year to allow Board members to see close-up progress and issues at restoration sites. APG also continues to disseminate information to the general public through a variety of methods including direct mails, news releases, Information Line, Web Site, fact sheets, information repositories, public notices, and displays at community events.